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GUIDE
TO THE
MILITARY EXAMINATION
FOR
PROMOTION.



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GUIDE
TO THE
MILITARY EXAMINATION
FOR PROMOTION,

CONTAINING EVERYTHING RELATING TO THE
INTERIOR ECONOMY OF A COMPANY,

AND

HOW TO KEEP ITS ACCOUNTS,

ACCORDING TO THE LATEST HORSE GUARDS' CIRCULAR;

The Constitution, Form, and Power of Courts-Martial,
AND THE WORDING OF "SENTENCES:"

ALSO

TREATISES ON

CASTRAMETATION, FORTIFICATION, THE ATTACK, ESCALADING,
AND GARRISON GUNNERY AS APPLICABLE TO THE LINE.

BY CAPTAIN MARTIN,
4TH "THE KING'S OWN" (LATE 18TH "ROYAL IRISH").

A new and enlarged Edition.

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PREFACE.

THE indulgence with which my brother Officers have received this little work has induced me to publish a new and enlarged edition, which I trust will prove useful not only to Officers preparing for their Examination for Promotion, but also to those of the Militia who desire to become more intimately acquainted with the "interior economy" of the army. I have collected from the most authentic sources and condensed as much as possible the information it contains ; and as every Soldier should have a practical knowledge of Garrison Gun Exercise, I have added a treatise on that important subject.

In the Synoptical Table, on the Constitution and Power of Courts-Martial, I have embodied all the Clauses of the Mutiny Act, Articles of War, Horse Guards' Circulars, and Regulations, which have reference to each Court, Crime, or Punishment ; and I have classified the offences, showing the *degrees* of Court-Martial which may take cognizance of each, and the punishment such Court has power to award.

T. M.

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GUIDE

TO THE

MILITARY EXAMINATION,

ETC., ETC.

PART FIRST.

COMPANY'S ACCOUNTS.

SECTION I.—ENLISTMENT.

(Mutiny Act, Clauses 55 and 56.)

1. A MAN is enlisted, and becomes a Recruit, on accepting a Shilling for that purpose, from any person in Her Majesty's Service in uniform, and holding a "Beating order," or being otherwise duly authorised to raise Recruits.—(*Cl. 85.*)*

2. As soon as possible after enlistment, the Recruit must be taken to a Medical Officer for examination; if found "unfit" for the Service, he must be forthwith discharged from his engagement; the cause being recorded. If found "fit," and of the required age and stature, the 40th and 46th Articles of War must be read to him; and *within four days*, but not *sooner than twenty-four hours* after enlistment (any intervening Sunday not included), he must be taken before a Magistrate of the town, or Borough, in which he was enlisted, to be duly sworn in and attested according to law.—(*Art. 3.*)†

3. When a Recruit declares his intention of paying "Smart" (1*l.* 1*s.*), it must be paid within 24 hours after such declaration.—(*Cl. 56.*)

4. A "Bounty" of 4*l.* † is granted to each Recruit, which,

* *Cl.* refers to Clause of the Mutiny Act.

† *Art.* Articles of War.

‡ In time of war more is given.

on his joining his Regiment or Dépôt after "final approval," must be thus accounted for—

	£	s.	d.
To cash to recruit on attestation	0	2	6
„ regimental necessities supplied	2	14	2
„ cash	1	3	4
Total	4	0	0

5. An Act passed in 1847 limits the period of enlistment to ten years; but at the completion of that period, a Soldier may re-engage himself for a further service of eleven years.—(*Limited Service Act.*)

6. If a Soldier is ordered on Foreign Service within three years of the expiration of his first engagement, he may be re-engaged for eleven years more: if the second term expires while he is abroad, it may be prolonged for another two years.

7. Should a Soldier commit an offence a short time before the expiration of either term, he will be considered to be in the Service until after trial; and if a man is absent from his duty by reason of imprisonment, &c., such time shall not reckon as part of his service.

SECTION II.—LIST OF NECESSARIES SUPPLIED TO A RECRUIT.

1. No.	£	s.	d.
3 shirts, at 2s.	0	6	0
3 pairs of socks, at 1s.	0	3	0
1 pair regimental boots	0	7	6
1 pair summer trousers	0	4	0
1 pair breeches	0	0	8
1 pair mitts	0	0	8
2 towels, at 8d.	0	1	4
1 shell jacket	0	7	6
1 forage cap and number.	0	2	4
1 knapsack and straps.	0	12	6
1 canteen, and cover, and straps.			
1 razor, 10d.; and soap-brush, 5d.	0	1	3
1 knife, fork, and spoon	0	0	10
1 button-stick, and brush	0	0	5
1 tin of blacking	0	0	4
1 comb	0	0	4
1 stock and clasp	0	1	0
1 sponge, and pipeclay	0	0	4
1 cloth brush	0	0	8
1 set of shoe brushes	0	1	0
1 hoddall	0	0	6
Total	£2	14	2*

* Necessaries charged at the average Chatham prices.

2. Government grants yearly to each man,—one tunic, one pair of ammunition boots,* and one pair of black cloth trousers, which, together with the articles specified in the foregoing list, constitute what is termed the Soldier's "kit"; each article must be distinctly marked, kept in good repair, and replaced at his expense when required.

3. Any Soldier losing through neglect, or otherwise making away with any portion of his kit, or indeed anything of which he has charge, subjects himself to be tried by Court-Martial, which, after placing him under stoppages not exceeding two-thirds of his daily pay, until the deficiency be made good, may further sentence him to such other punishment as it may have power to award.

4. There being no standard price for necessaries, Captains of Companies cannot be too particular in ascertaining that their men get supplied with the best procurable articles for the amount charged; nor should a Quartermaster be permitted to keep any article in his store that has not been duly approved of by the Captains of the Corps; and no issue should ever be made to the Soldier until it has been ascertained that he really requires it.

* A Sergeant receives two pairs.

SECTION III.—WEIGHT AND PRICE OF ARMS, ACCOUTREMENTS, AND NECESSARIES.

		Weight.		Price.		
		lb.	oz.	£	s.	d.
Arms, acc'ts., & amm'n., lb. 21-93.	Percussion musket and swivels	10	5½	2	17	3
	Buff sling	0	6	0	1	6
	Bayonet	1	0½	0	2	9
	Bayonet scabbard	0	5½	0	0	10
	Waist belt and clasp	0	15½	0	5	6
	Pouch	2	4½	0	7	6
	Pouch belt	0	9	0	3	6
	60 rounds percussion ball cartridge*....	5	8	1	0	0
	75 copper caps and tin box for do.	0	4	0	0	9
	Chaco complete, with ball (G)	0	15	0	3	6
Necessaries on person, lb. 11-13.	Tunic† (G).....	3	4	0	13	0
	Leather copper cap pocket (G)	0	1	0	0	8
	1 pair black cloth trousers (G)	1	13½	0	8	6
	1 pair ammunition boots (G)	3	0½	0	8	0
	1 stock and clasp	0	2½	0	1	0
	1 shirt	0	14	0	2	0
	1 pair socks	0	4½	0	1	0
	1 pair braces	0	2	0	0	9
	1 pair mitts	0	2½	0	0	8
	1 haversack (on service)	0	6½	0	0	10
On knaps. lb. 6-9½.	New knapsack and straps	4	8	}	0	12 6
	Canteen, cover, and straps	1	3			
	Forage cap and number	0	6½	0	2	4
	Great coat†	5	0	0	13	6
Necessaries in the new knapsack, lb. 8-0½.	1 pair summer trousers	1	2½	0	6	0
	1 pair regimental boots	3	0½	0	7	6
	1 pair socks	0	4½	0	0	6
	1 shirt	0	14	0	2	0
	1 towel	0	3½	0	0	8
	1 holdall complete	1	3	0	3	6
	1 brush	0	5½	0	0	6
	Blacking and cleaning things	0	14½	0	0	6
	Account book	0	1½	0	0	3
	1 shell jacket	1	6½	0	7	6
In squad-bag, lb. 3-6½.	1 shirt	0	14	0	2	0
	1 towel	0	3½	0	0	8
	1 pair socks	0	4½	0	0	6
	2 brushes	0	10½	0	1	0
Total.....		55	4	10	0	11

* The ammunition is here charged at 4d. per round, and copper caps at 10s. per 1000—the rate at which the Soldier has to pay for any deficiency.

† Sergeant's tunic, 28s.; trousers, 12s.; forage cap, 3s. 6d.; sash, 1s. 6d.; chaco, 6s.; shell, 20s.

‡ Great coats are provided at the expense of Government, and are supplied on requisition to the Secretary-at-War, through the Regimental Agent. They are to be folded and strapped on the outside of the knapsack.

RECAPITULATION.

	Weight.	Price.
	lb. oz.	£ s. d.
Arms and accoutrements	15 13 $\frac{1}{4}$	3 18 10
Ammunition	5 12	1 0 9
Government clothing, marked G.....	11 1 $\frac{1}{4}$	1 13 8
Regimental necessaries on person.....		0 6 3
Knapsack complete, in heavy marching order ..	19 2	2 9 9
In squad-bag (4 per company).....	3 6 $\frac{1}{2}$	0 11 8
Total.....	55 4	10 0 11

RIFLE MUSKET.		
Point-blank 200 yds.; range 900 yds.	Weight.	Price.
	lb. oz.	£ s. d.
Musket and sling	10 2	3 17 0
Bayonet and scabbard	1 5 $\frac{1}{2}$	0 4 0
60 rounds ammunition, and 75 caps	7 1	1 0 0

(See TABLE at SEC. VII.)

SECTION IV.—EQUIPMENT.

The Arms and Appointments, &c., must be inspected yearly by a Regimental Board.

(See *Regimental Boards, Part II., Sec. 4.*)

1.—ISSUE OF CLOTHING,* ARMS, &c.

1 Tunic	}	1st of April each year.
1 pair black cloth trowsers.....		
Ammunition boots { Sergeants each 2 pairs	}	Every 2 years.
{ Other ranks each 1 pair.....		
1 Chaco complete	}	3 years.
1 Greatcoat (on application to Secretary-at-War)		
Sergeant's sashes.....	}	12 years.
Arms		
Accoutrements	}	6 years.
Swords		
Drums.....	}	20 years.
Pair of silk colours and cases.....		
Bayonet and sword scabbards	}	
Leather copper-cap pocket.....		
Bugles.....	}	
Armourer's forge and pack-saddle		

* The Clothing of the Army now forms a separate Department under the War Office; it is composed of a Military Inspector-General and a Civil Deputy, whose care it is to form all Contracts and see that they are strictly fulfilled.

2. A size-roll, agreeably to form (*Reg.* p. 154), must be forwarded yearly from each Corps to its *Clothier*, to enable him to fit the men as nearly as possible; as, however, alterations are necessary notwithstanding this precaution, *one shilling* may be charged for each suit by the *Regimental* tailor, of which the Soldier pays 6*d.* and the Clothier 6*d.*

3. When clothing is not issued, a monthly compensation is granted of—

To a Sergeant	5 <i>s.</i>
Other ranks	2 <i>s.</i> 9 <i>d.</i>

No broken periods of a month can be charged.

4. The yearly clothing must be issued to the men and taken into constant wear on the 1st of April, or within *three* months from the date of its receipt at the Regimental Head Quarters; twelve weeks being considered a sufficient time for fitting and alterations. The practice of saving portions of clothing, with a view to receiving compensation in money in lieu thereof the following year, is disapproved of.—(*Add. Reg.** p. 1.)

SECTION V.—REPAIRS OF ARMS.

Reg. p. 91.

1. Officers in command of companies are chargeable with the repair of all damage done to arms on parade, or on the line of march, when it has been ascertained that such damage was not occasioned by the neglect or carelessness of the Soldier.

2. The arms are to be “browned” every two years by the Armourer, at a charge of 8*d.* per barrel, to be paid by the Soldier.

3. The locks must be cleaned once a month by the Armourer; 1*d.* for each is charged to the Captain.

4. The 10th Article of War states, that “every Captain is charged with the arms, accoutrements, ammunition, clothing, and other warlike stores belonging to his company, for which he is responsible to his Colonel, or Commanding Officer, in case of their being spoiled, lost, or damaged, not by unavoidable accident or on actual service.”

SECTION VI.—AMMUNITION.

1. The Service cartridge for the percussion musket is

* *Add. Reg.* refers to the “Addenda to the Regulations.”

composed of $4\frac{1}{2}$ drachms of powder and a spherical bullet of lead, $14\frac{1}{2}$ to the pound.

2. The Rifle Musket cartridge is composed of $2\frac{1}{2}$ drachms of powder and a conical bullet of lead, 10·05 to the pound, having its base partially hollowed and fitted with a small iron cap for the purpose of forcing the lead, when projected, into the grooves of the barrel, and thereby causing such decrease of windage as to give an effective range of 900 yards (*see* Table). The cartridges are greased, and the bullet is reversed in loading.

The new Pritchett bullet is of the same make as the Minié, but smaller in diameter (*see* Table), and does not require the iron cap (which has been found objectionable, as so much depends on the accuracy with which it is fixed in the bullet); this new bullet is so hollowed that the explosion of the powder causes it to expand and fill the grooves of the rifle; the result is the same as shown above.

3. Cartridges are made up into packages of 10 rounds each, and packed in barrels of 50 packages.

4. Percussion caps are issued in the proportion of 50 to every 40 rounds of ball cartridge, and 11 to every 10 rounds of blank.

5. When *not* on service, each man must be provided with 20 rounds of service ammunition and caps; but on any emergency, or *on* service, that quantity must be increased to 60 rounds and 75 caps.

6. The following allowance of practice ammunition may be expended annually per man; two-thirds in the spring, the rest in the autumn; application for which must be made to the Ordnance Department between the undermentioned periods:—

Spring allowance between the 1st April and the 1st August in each year.

Autumn allowance between the 1st September and the 1st December in each year.

PRACTICE AMMUNITION.

For Percussion Muskets :	For Rifle Muskets :
30 rounds ball, and 37½ caps.	90 rounds ball and 112½ caps.
60 rounds blank and 70 caps.	

(*Horse Guards' Memo.*, 24th July, 1852; 23rd April, 1853.)

7. Sergeants are not to be included in requisitions for blank cartridge.

8. Service ammunition must not be used for practice without sanction, and *vice versa*.

9. To prevent accidents, blank ammunition must always be made up in "blue" paper.

SECTION VII.—TABLE OF SMALL ARMS.

DESCRIPTION OF MUSKET.	DIMENSIONS.				WEIGHT.		AMMUNITION.				RANGE.			REMARKS.
	Length of musket.	Do. with bayonet.	Length of barrel.	Diameter of bore.	Weight of musket.	Do. with bayonet.	Weight of bullet.	No. of bullets per lb.	Powder in cart-ridge.	Weight of 60 rounds (packed) and 75 caps.	Point-blank.	Slighted-range.	Extreme effective.	
	ft. in.	ft. in.	ft. in.	inches.	lbs. oz.	lbs. oz.	oz. dr.	No.	dra.	lbs. oz.	yards.	yards.	yards.	
Percussion (1842)	4 7	6 ½	3 3	·753	10 2	11 3	1 1·99	14·23	4½	5 12	151	...	312	In taking aim, the rules for guns apply also to small arms. (See Garrison Gunners, Section 1, <i>Dofs.</i> 5, 6, 7.)
Rifle Musket (1851)	4 7	6 ½	3 3	·702	9 9½	10 8½	1 9·4	10·08	2½	7 1	200	900	1000	{ Smooth bore—spherical ball. Minié's conical bullet, fitted with an iron cap. The barrel has 4 grooves, which have a spiral ¼ turn in its length (3 ft. 3 in.). Pritchett's conical bullet, which expands without an iron cap. Barrel 3 grooves; spiral ¼ turn in 3 ft. 3 in.
Enfield Rifle (1853)	4 7	6 ½	3 3	·577	8 8	9 3	1 3·36	13·22	2½	5 8½	200	800	1000	{ Smooth bore—spherical ball. Pritchett bullet—grooves and turn same as Enfield rifle.
Victoria Carbine (1842)	3 6	...	2 2	·733	7 9	...	1 1·99	14·23	2½	6 9	...	...	160	
Artillery Carbine (1853)	3 4½	5 3	2 0	·577	6 7½	8 3½	1 3·36	13·22	2	5 6½	200	300	1000	

SECTION VIII.—SAVINGS BANK.

1. The rate of interest upon deposits is 3*l.* 15*s.* per cent. per annum. No interest is allowed upon any other parts of 1*l.* than 6*s.* 8*d.* or 13*s.* 4*d.*, nor upon any sums that have not remained in deposit for at least one month, to be reckoned from the last monthly muster day. When a sum is withdrawn at any time between muster days, interest will only be allowed up to the last muster day, unless such day be the muster day.

2. A soldier cannot deposit for interest, more than £30 a year; nor is the whole amount of any one man's deposit for interest to exceed £200.

3. Interest upon all sums in deposit must be added to the principal *quarterly*, and will henceforth bear interest.

4. When a Soldier wishes to withdraw any sum he has deposited, at least 7 days' notice must be given.

5. When a man is discharged, his deposits may remain at interest for a period not exceeding 6 months; but if desired, the principal may be retained for a longer time, but without interest.

6. When a Soldier dies, the interest on his deposits ceases on the next muster day; and, together with the principal, it must be added to his other effects.

7. A Soldier recorded as a Deserter by a Board, or convicted as such by a Court-Martial, thereupon forfeits the whole of his Savings to the public.

8. A Captain must keep the Savings Bank Ledger belonging to his Company, and is responsible for the correct entry in it of all deposits and withdrawals, also that the former are duly debited against him, and the latter credited to him by the Paymaster, in his abstract on the back of the monthly pay-list.

SECTION IX.—THE POCKET LEDGER.

1. THE SOLDIER'S POCKET LEDGER contains extracts from the Articles of War, and from the Pension, and Good-Conduct Warrants, and such other information necessary for the Soldier; each man, on joining, must be provided with one; and, at each monthly settlement, the balance, if any, of his account as per Company's Ledger, must be distinctly entered, the Captain signing it when it exhibits a credit; the Soldier, a debt; and both signing when the account is "square."

2. All issues of Government Clothing must be entered and signed for; and all wounds received in action, all promotions, reductions, services, &c., &c., with the name and address of the man's next of kin, must be duly recorded.

3. When a man has money deposited in the Regimental Savings Bank, a monthly account of it must appear in the Pocket Ledger.

4. When a man dies, his book is forwarded to his relations, through the War Office.

SECTION X.—MUSTER.

1. MUSTER takes place on the last day of each month, unless that day should be a Sunday, when it is taken on the following day. The Regimental Muster Roll must contain the name of each Officer and Soldier in the regiment, the date of enlistment of each recruit, each man's regimental number, and *generally*, any remark that may tend to make it an accurate record.

2. THE COMPANY'S MUSTER ROLL AND PAY-LIST is a document of much importance, and should be most correctly made out. It must contain a Roll of the Company, agreeing in every respect with the Regimental Muster-Roll; and must also show the amount of Pay, Allowances, &c., &c., which each man became entitled to during the past month; together with all stoppages and Forfeitures: according to the Form in the opposite page.

8. A Pay-List is sent every month to the Paymaster, who returns it with any corrections that may be required, and with an abstract of his account with the Company, made out on the back of it.

PAY-LIST OF CAPTAIN A. B.'S COMPANY, FOR JANUARY, 1855.												
Regimental No.	Rank and names.	No. of days for which pay is charged.	Rate per diem. s. d.	Amount. s. d.	No. of days' marching allowance.		No. of days subsisted in confinement.	Stoppages.				REMARKS. Explanatory of broken periods, and whether the rate includes good conduct or additional pay, &c., &c.
					Full.	Hot.		On board ship.	Hospital.	Not entitled to beer money.	Forfeited.	
			s. d.	s. d.								

SECTION XI.—STOPPAGES FOR MESSING, WASHING, &c.

1. The full amount of stoppages to be charged against the Soldier must in no case exceed the following rates, unless at his own request, or by sentence of Court Martial:—

	Cavalry per week.		Infantry per week.	
	At home.		Abroad.	
	s. d.	s. d.	s. d.	s. d.
For messing and washing, including price of ration....	4 11½	4 4½	4 1	3 6
For necessaries.....	2 7½	2 7½	1 6	1 6
For articles for cleaning appointments, &c., and other incidental expenses	0 3½	0 3½	0 6½	0 6½
Total per week....	7 10½	7 3½	6 1½	5 6½

At home, the price of the daily ration must not exceed 4½d. to the Soldier. Abroad, it has been reduced to 3½d., as shown. Officers, 1½d.

2. Should a man be in debt, and the charge for washing and messing be less than the regulated daily rate, the Captain may apply the difference towards the liquidation of such debt.—(*War O. Reg. page 9*)

3.—DAILY RATE OF MESSING AND WASHING OF A BATTALION PER MAN.

Ration under 4½d.		s.	d.
{	1 lb. bread (contract price 3½d. per 4lb. loaf).....	0	0½
	½ lb. meat (contract price 3½d. per lb.)	0	2½
	Breakfast and vegetables	0	2
	Evening meal (bread and tea)	0	1½
	Washing, at 4d. per week	0	0½
		0	7½

SECTION XII.—HOSPITAL.

1. When a man reports himself sick, he must be taken to Hospital by a non-commissioned Officer for medical inspection; if admitted, the Pay Sergeant of his Company must take his arms, appointments, and ammunition into store, until he returns to his duty; and his kit is given in charge to the Hospital Sergeant.

2. Stoppages at the following rate are to be charged against the Soldier for each day that he is detained in Hospital.

	Men.	Boys.
At home	10d.	} 8d.
Abroad	9d.	

3. Hospital stoppages are not to be charged for the day on which a man reports himself sick, as he must pay for that day's messing and washing, but they are to date from the day *after* he is taken into Hospital, and must include the day of his discharge. (See "Form of Accounts," Case 3.)

4. When a man under sentence of imprisonment is admitted into Hospital, the time he remains there counts towards the completion of his punishment; for hospital charges in this case, see "Form of Accounts," No. 1.

5. Men in hospital should always (when practicable) be settled with monthly, and their "balance credit," if any, carried over to the next month's account.

SECTION XIII.—PAY AND ALLOWANCES.

1. CONTINGENT ALLOWANCE.—The Officer in command of a Company not exceeding 50 men, receives an allowance of 1s. a day; and for every additional 25 men, 6d. extra, as an indemnification for the repairs of arms and other incidental expenses.

2. Pay, according to the following scale, is allowed for those men *only* whose names appear in the monthly Muster-Roll; it is drawn in advance weekly, by the Regimental Paymaster from the War Office, through the Army Agent appointed to receive it by the Head Colonel of the Corps, and is issued weekly to Captains of Companies, for distribution to their men in daily payments.

DAILY PAY OF RANK AND FILE.	Cavalry.		Infantry.	
	s.	d.	s.	d.
Sergeant-major receives, including l.d. beer money	3	7	3	1
Quartermaster-sergeant.. "	0	0	2	7
Troop sergeant-major .. "	3	0	2	5
Colour-sergeant..... "				
Sergeant	2	3	1	11
Corporal	1	8½	1	5
Drummer	1	8	1	2½
Private	1	4	1	1
Boys under 15 years	0	10	0	10

3. THE PAY SHEET must show the amount of daily pay issued to each man; the Officer present at each day's payment must sign the column he has seen marked off. "As men should receive the residue of their pay (after paying for their living) in daily portions as nearly equal as possible, it is not expected that the amount charged in the Company's Ledger under the head of 'daily payments,' should in all cases exactly balance the account; or that there should not occasionally be a few pence one way or the other at the end of the month."—(*Horse Guards' Circular*, Aug., 1850.)

4. DAY BOOK.—This book must be of a portable size, having a page in it assigned to each man; all articles, or repairs required, and any extra cash payments, must be entered in it directly they are ordered; the dates and prices to be affixed when the issue is made, the repairs executed, &c.

5. THE ACQUITTANCE ROLL is a document for the information of the Commanding Officer; it must be signed by each man present with his Company at the monthly settlement, (whether in debt, credit, or otherwise,) as an acknowledgment that he is satisfied with the correctness of his accounts, and that any claims he may have had for clothing, &c., have been duly settled. At the foot of the Roll, the Captain must certify that the Arms, Accoutrements, Ammunition and Necessaries belonging to his Company are in a serviceable condition, and that all tradesmen's bills have been duly paid.

6. FURLOUGHS should, if possible, date from the 1st day of the month inclusively; the advance made to men availing themselves of this indulgence should not exceed—

To a Sergeant	1s. per diem.
„ other ranks	3d. „

The remainder of their pay (excepting liquor money which is not allowed while on furlough) will be credited to them on their return. The same rule, as regards advance of pay, also applies to passes, which Commanding Officers may grant between the half-monthly returns. Furloughs can only be granted by application to the Officer commanding the station, &c. Commanding Officers may allow steady soldiers to take their great coats with them, when going on furlough in winter.

7. **MARCHING MONEY.**—For each day's march of not less than 10 miles, a man receives—

In England	3d.
„ Ireland	4d.
„ Scotland	5d.

In England, a further allowance of 10d. a day is granted for a “hot meal.”—(*Cl. 71.*)

When men arrive at their destination, after a long journey by railway or steamer, they may receive, if

In England.....	A hot meal.
„ Ireland	4d.
„ Scotland.....	5d.

—(*Ex. Direc. W. O. Reg., page 100, par. 350.*)

8. **LODGING MONEY.**—2d. a day is granted to “three” married men, per 100 rank and file, to find their own lodgings, when their corps are stationed in Barracks either at home or abroad.

9. **STATIONARY QUARTERS.**— $\frac{1}{2}$ d. a day is allowed for each man not dieted as a Soldier on the march: in Scotland, this is given to the Soldier, and in England, to the innkeeper upon whom the man is billeted.—(*Cl. 71.*)

When men are *quartered* on the inhabitants of Scotland, the latter are allowed 1d. a day per man; those of Ireland, are allowed as follows per week:—

	In Dublin.	In the Country.
For each Sergeant	1s. 1d.	1s.
„ other ranks	6 $\frac{1}{2}$ d.	6d.

The above are always charged under the head of “Increased Rates.”

SECTION XIV.—REGIMENTAL AND COMPANY'S BOOKS.

The following are the Books required to be shown at each half-yearly inspection by every Regiment and Company.

1.—REGIMENTAL BOOKS IN CHARGE OF THE ADJUTANT.

1 for General Orders.	1 for Description of Deserters.
1 " Regimental Orders (2 parts).*	1 " Defaulters.
1 " Record of Officers' Services.	1 " Courts Martial.
1 " " Soldiers' "	1 " History of Services.
1 " Letters.	1 " Marriages and Baptisms.
1 " Returns.	1 " Savings Bank Ledger.
1 " Register of Furloughs.	1 " Target Practice.
Extra for Cavalry.....	{ 1 for Description of Horses.
	{ 1 " Equitation Register.

2.—REGIMENTAL BOOKS IN CHARGE OF THE QUARTER-MASTER.

1 for Account of Clothing.	1 for Account of Accoutrements and
1 " " Arms and Ammu- nition.	Saddlery.
1 Letter-book.	1 " " Fuel, Forage, and Provisions.

3.—COMPANY'S BOOKS SUPPLIED BY AND IN CHARGE OF THE CAPTAIN.

1 Company's Ledger.	1 Store-book, showing the distribu- tion of Arms, Accoutrements, Ammunition, Great Coats, &c.
1 Day-book.	1 Savings Bank Ledger (supplied by Government).
1 Target Practice.	
1 Order-book.	
1 Defaulters' Book.	

SECTION XV.—THE COMPANY'S LEDGER.

1. "Each man is to have a clear leaf of the ledger to himself, with his name and regimental number distinctly written on the top of each page; and no new account is ever to be opened on the leaf containing the accounts of any man who may have become non-effective; by this means, when men happen to be 'transferred' from one Company to another, the leaves containing their accounts may be removed, or transferred with them."—(*H. G. Cir.*, Aug., 1850.)

2. "The date of the issue of all articles of necessaries, or extra cash payments, must be stated in the margin of the account; and all entries should be clearly transcribed from the Day Book without contractions, and no two entries should

* One part for temporary orders, and the other for permanent ones.

be made on the same line, unless for articles issued on the same day."

3. In order to show at once the expense of the Soldier's living, the cost of the "ration" (which must never exceed $4\frac{1}{2}d.$) is to be included in the charge for "messing," the daily rate of which is to be specified.

4. Every man who can write, however badly, must be required to sign his account in the presence of the Officer paying the Company, who must also affix his signature, as a voucher that he explained the account to the man, and saw him sign it. When men cannot write, the Officer must cause their "marks" to be witnessed by some other person, not the Pay Sergeant, thus:—

his
JAMES X O'GRADY.
mark.

Witness { JOHN MURRAY,
Corporal.

SECTION XVI.—METHOD OF KEEPING A COMPANY'S LEDGER.

The following Forms will show the order in which the several items of a Soldier's account are to be charged and entered in the Company's Ledger, according to the *Horse Guards' Circular*, dated *August*, 1850; the several cases are arranged so as to provide for most casualties:—

METHOD OF KEEPING THE COMPANY'S LEDGER.

According to the *Horse Guards' Circular*, August, 1850.

CASE 1.

Sergeant JOHN SMITH was placed under arrest on the 4th Jan. 1855, and reported himself sick. 5th to 9th, in hospital (both days inclusive).

11th, he was tried by a Regimental Court-Martial, and sentenced to be reduced, and to 14 days' solitary confinement.

25th, received a shell-jacket, 7s. 6d.; and a forage-cap and number, 2s. 4d.

28th, 1 pair of mitts, 8d.

REMARKS.

Sergeants are not generally charged with washing in their accounts, and in some corps their messing is not charged for. The 11th and 24th days are included in the term of imprisonment.

No. 1047, SERGEANT JOHN SMITH.					Cr.		
Dr.	Sums paid and Articles furnished.	£	s.	d.	£	s.	d.
1855							
Jan. 31	To 4 days' messing, at 10d.	0	8	4	0	8	6
"	" 7 days' messing, at 7½d.*	0	4	3	0	7	0
"	" amount of daily payments.....	0	5	0½	0	0	10
"	" 3 days' arrest, 14 days' solitary confinement, at 6d.	0	8	6	0	8	0
"	" 5 days' prisoner in hospital, at 10d	0	4	2	0	4	2
"	" barrack damages, 1d.; sheets, 2d.	0	0	3	0	0	1
"	" hair-cutting, 1d.; washing, 3d..	0	0	4			
"	" library, 1d.; marking, 1½d.	0	0	2½			
25	" shell jacket, 7s. 6d.; forage cap and number, 2s. 4d.....	0	9	10			
28	" 1 pair of mitts, 8d.	0	0	8			
	A. B. Captain.	£1	18	7	21	18	7
	John Smith.						

* The daily rate of messing depends entirely on the contracts and the station.

REMARKS.

CASE 2.

Additional or good conduct pay, on promotion to Sergeant, merges into the 1s. 10d. a day.

Corporal JOHN BROPHY has upwards of 14 years' service, and is in the receipt of 2d. additional pay.
 10th Jan. 1855, promoted Sergeant.
 12th " a Sergeant's shell-jacket, 20s., as per Day Book.
 13th " a forage-cap and number, 3s. 6d. "

No. 980, CORPORAL JOHN BROPHY.						CR.	
Dr.	Date.	Sums paid and Articles furnished.	£	s.	d.	£	s.
1855	Jan. 31.	To balance Dr. last month	0	0	10		
"	"	" 10 days' messing, at 7d.	0	6	1½		
"	"	" 21 days' messing, at 10d.	0	17	6		
"	"	" amount of daily payment	0	6	0½		
"	"	" barrack damages, 2d.; sheets, 2d.	0	0	4		
"	"	" hair-cutting, 1d.; washing, 5½d.	0	0	6½		
"	"	" school, 4d.; library, 1d.; marking, 1d.	0	0	6		
12	"	" shell-jacket, 20s.	1	0	0		
18	"	" forage cap and number, 3s. 6d. ...	0	3	6		
		Balance Cr.	0	0	9		
		A. B. Captain.	£2	16	1	£2	16
		John Brophy, Sergt.					1

Class 3.

		REMARKS.
Private CHARLES DUGAN enlisted on the 1st Jan., 1845; on the 1st Jan., 1850, he became entitled to 1d. a day good-conduct pay, and to another on the 1st Jan., 1855		See Good Conduct Pay, at Sec. 17, p. 3.
5th Jan., 1855, admitted into hospital		Both days inclusive.
8th " " discharged from hospital		
9th " " received a shirt, 2s.; cloth trousers repaired, 8d.		
10th " " musket browned, 8d.		
11th " " promoted Corporal; received a shell-jacket, 7s. 6d.		
27th " " sent on escort duty, 4 marches (England)		Accounted for under the head of " Daily Payments."
31st " " returned off escort and placed under arrest		Losses "hot meal," which otherwise he would have been entitled to.
3rd Feb., 1855, tried by Court-Martial, and reduced		Losses 1d. good-conduct pay in consequence.
4th " " received a new pocket-ledger, 3d.		As per Day Book.
8th " " a new nipple to firelock 8d.		
10th " " absented himself without leave.		
14th " " returned to his quarters, and placed in confinement.		
15th " " awarded, by Commanding Officer, 5 days' pay stopped and 7 days' hard labour.		Losses 1d. good-conduct pay in consequence.

No. 1807, PRIVATE CHARLES DUNCAN.						Cr.			
Date.	Sums paid and Articles furnished.	£	s.	d.	Date.	Amount of Pay and Allowances.	£	s.	d.
1855 Jan. 31	To 22 days' messing, at 7½d.	0	13	5	1855 Jan. 31	By balance Cr. last month	0	0	10
"	" amount of daily payments	1	8	5	"	" 10 days' pay, at 1s. 2d.	0	11	8
"	" 4 days' hospital charges, at 10d.	0	8	4	"	" 20 days' pay, at 1s. 6d.	1	10	0
"	" 1 day under arrest, at 6d.	0	0	6	"	" 30 days' liquor money, at 1d. ..	0	2	6
"	" barrack damages, 2½d.; sheets, 2d.	0	0	4½	"	" 1 day in confinement, at 6d. ..	0	0	6
"	" hair-cutting, 1d.; marking, 1d.	0	0	2	"	" 4 days' marching pay, at 1s. 1d.	0	4	4
"	" washing, at 7½d.	0	1	0½		Balance Dr.....	0	8	8
"	" school, 4d.; library, 1d.	0	0	5		Charles Duncan.			
10	" musket browned	0	0	8					
9	" 1 shirt, 2s.; cloth trousers re- paired, 8d.	0	2	8					
11	" shell jacket, 7s. 6d.	0	7	6					
	A. B. Captain.	£2	18	6			£2	18	6
Feb. 28.	To balance Dr. last month	0	8	8	Feb. 28	By 6 days' pay, at 1s. 1d.	0	6	6
"	" 13 days' messing, at 8½d.	0	8	11½	"	" 12 days' pay, at 1s.	0	12	0
"	" amount of daily payments	0	2	1	"	" 18 days' liquor money, at 1d. ..	0	1	6
"	" 3 days' arrest, 7 days' prison, at 6d.	0	5	0	"	" 10 days in confinement, at 6d.	0	5	0
"	" 5 days' pay stopped, by Com- manding Officer, at 1s. 1d.	0	5	5		Balance Dr.....	0	7	0½
"	" hair-cutting, 1d.; washing, 7d.	0	0	8		Charles Duncan.			
"	" library, 1d.; barrack damages, 1d.	0	0	2					
"	" sheets, 2d.	0	0	2					
" 4	" new pocket ledger, 3d.	0	0	3					
8	" new nipple to firelock, 8d.	0	0	8					
	A. B. Captain.	£1	12	0½			£1	12	0½

Case 4.

REMARKS.

Private WILLIAM HIGGINS received furlough from the 1st Dec., 1854, to the 10th Jan., 1855...

41 days.

10th Jan., 1855, returned off furlough.

12th " received 2 shirts, 4s.; 1 pair boots, 7s. 6d.

13th " received a shell-jacket, 7s. 6d.

14th " drunk on duty and confined.

16th " tried by a Regimental Court-Martial, and sentenced to 42 days' hard labour,
and to lose 1d. per diem for 80 days

The term of imprisonment includes the day on which the president signs the proceedings.
The forfeiture commences at the expiration of the term of imprisonment.

No. 997, PRIVATE WILLIAM HIGGINS.									
Date.	Sums paid and Articles furnished.	£	s.	d.	Date.	Amount of Pay and Allowances.	£	s.	d.
1854 Dec. 31	To amount of daily payments " 41 days' advance on furl., at 8d. his Wm. + Higgins. mark. Witness { John Blake, Sergeant.	0 1	0 7	10 4	1854 Dec. 31	By balance Cr. last month " 41 days' advance on furl., at 8d. A. B. Captain.	0 1	0 7	10 4
		£1	8	2			£1	8	2
1855 Jan. 31	To 3 days' messing, at 7 ¹ / ₂ d. " amount of daily payments " 2 days' confinement, at 6d. " 16* days' imprisonment, at 6d. " barrack damages, ¹ / ₄ d.; sheets, 2d. " hair-cutting, 1d.; marking, 1d. " washing, 1 ¹ / ₄ d. " 2 shirts, 4s.; 1 pair boots, 7s. 6d. " 1 shell jacket, 7s. 6d.	0 0 0 0 0 0 0 0 0 0 0	1 1 1 8 0 0 0 0 11 7	10 2 0 0 0 2 ¹ / ₄ 2 1 ¹ / ₄ 6 6	1855 Jan. 31 " " "	By 41 days' difference of pay on furlough, at 4d. " 3 days' pay, at 1s. " 8 days' liquor money, at 1d. " 18 days in confinement, at 6d. [Balance Dr. his Wm. + Higgins. mark. Witness { John Murphy, Corporal.	0 0 0 0 0 0	13 3 0 9 5	8 0 8 0 7
	A. B. Captain.	£1	11	6			£1	11	6

* The remaining 26 days to be charged in next month's account

GUIDE TO THE

1876

Jan. 31.

To amount of daily payments

"

"

10

" hair-cutting, 1d.

" Henry, 1d.

" a new drum-head, 3s. 6d.

1

15

74

Jan. 31.

"

"

"

"

"

"

"

"

By 31 days' pay at 1s. 1½d.

" 31 days' liquor money, at 1d. ...

" 31 days' lodging money, at 2d. .

1

15

6½

0

2

7

0

5

2

"

"

A. H.

Expenses.

John Mullins,

CASE 6.

Private JOHN MURPHY was admitted into hospital on the 6th January, 1855.

Died on the 25th January, 1855.

REMARKS.

Inclusively.

Receives pay for that day, and is charged hospital stoppages.

No. 1829, PRIVATE JOHN MURPHY.						Cr.			
Date.	Sums paid and Articles furnished.	£	s.	d.	Date.	Amount of Pay and Allowances.	£	s.	d.
1855 Jan. 31	To 5 days' messing, at 7½d.	0	3	1½	1855 Jan. 31.	By 25 days' pay, at 1s.	1	5	0
"	" amount of daily payments	0	2	1	"	" 25 days' liquor money, at 1d. ..	0	2	1
"	" 20 days' hospital stoppages, at 10d.	0	16	8	"	" Sale of necessities	1	3	0
"	" sheets, 2d.; washing, 2½d.	0	0	4½		Balance Dr.....	0	7	2
"	" funeral expenses	1	15			A. B. Captain.			
	Died 25th Jan. 1855.	£2	17	3			£2	17	3

CASE 5.

Drummer JOHN MOLLOY, being married with leave, is permitted to be out of Mess, and also to find his own lodgings.
10th January, 1855, received a new drum-head, 3s. 6d.

Dr.					Cr.				
No. 1173, DRUMMER JOHN MOLLOY.									
Date.	Sums paid and Articles furnished.	£	s.	d.	Date.	Amount of Pay and Allowances.	£	s.	d.
1855					1855				
Jan. 31.	To amount of daily payments	1	19	7½	Jan. 31.	By 31 days' pay at 1s. 1½d.	1	15	6½
"	" hair-cutting, 1d.	0	0	1	"	" 31 days' liquor money, at 1d. ...	0	2	7
"	" library, 1d.	0	0	1	"	" 31 days' lodging money, at 2d. .	0	5	2
10	" a new drum-head, 3s. 6d.	0	3	6					
	John Molloy.	£2	3	3½		A. B. Captain.	£2	3	3½

REMARKS.

CASE 6.

Private JOHN MURPHY was admitted into hospital on the 6th January, 1855.

Died on the 25th January, 1855.

Inclusively.

Receives pay for that day, and is charged hospital stoppages.

No. 1829, PRIVATE JOHN MURPHY.						CR.	
Dr.						£	s.
Date.	Sums paid and Articles furnished.	£	s.	d.	Date.	Amount of Pay and Allowances.	£
1855					1855		
Jan. 31	To 5 days' messing, at 7½d.	0	3	1½	Jan. 31.	By 25 days' pay, at 1s.	1
"	" amount of daily payments	0	2	1	"	" 25 days' liquor money, at 1d. ..	0
"	" 20 days' hospital stoppages, at 10d.	0	16	8	"	" Sale of necessities	1
"	" sheets, 2d.; washing, 2½d.	0	0	4½		Balance Dr.	0
"	" funeral expenses	1	15			A. B. Captain.	7
	Died 25th Jan. 1855.	£2	17	3			£2
							17
							3

CASE 5.

Drummer JOHN MOLLOY, being married with leave, is permitted to be out of Mess, and also to find his own lodgings.
10th January, 1855, received a new drum-head, 3s. 6d.

No. 1173, DRUMMER JOHN MOLLOY.						Cr.		
Date.	Sums paid and Articles furnished.	£	s.	d.	Date.	Amount of Pay and Allowances.	£	s. d.
1855					1855			
Jan. 31.	To amount of daily payments	1	19	7½	Jan. 31.	By 31 days' pay at 1s. 1½d.	1	15 6½
"	" hair-cutting, 1d.....	0	0	1	"	" 31 days' liquor money, at 1d....	0	2 7
"	" library, 1d.	0	0	1	"	" 31 days' lodging money, at 2d. .	0	5 2
10	" a new drum-head, 3s. 6d.	0	3	6				
	John Molloy.	£2	3	3½		A. B. Captain.	£2	3 3½

CASE 6.

Private JOHN MURPHY was admitted into hospital on the 6th January, 1855.

Died on the 25th January, 1855.

REMARKS.

Inclusively.

Receives pay for that day, and is charged hospital stoppages.

Dr.		No. 1829, PRIVATE JOHN MURPHY.				Cr.			
Date.	Sums paid and Articles furnished.	£	s.	d.	Date.	Amount of Pay and Allowances.	£	s.	d.
1855					1855				
Jan. 31	To 5 days' messing, at 7½d.	0	3	1½	Jan. 31.	By 25 days' pay, at 1s.	1	5	0
"	" amount of daily payments	0	2	1	"	" 25 days' liquor money, at 1d. ..	0	2	1
"	" 20 days' hospital stoppages, at 10d.	0	16	8	"	" Sale of necessities	1	3	0
"	" sheets, 2d.; washing, 2½d.	0	0	4½		Balance Dr.	0	7	2
"	" funeral expenses	1	15			A. B. Captain.			
	Died 25th Jan. 1855.								
		£2	17	3			£2	17	3

CASE 5.

Drummer JOHN MOLLOY, being married with leave, is permitted to be out of Mess, and also to find his own lodgings.
10th January, 1855, received a new drum-head, 3s. 6d.

Dr.		No. 1173, DRUMMER JOHN MOLLOY.				Cr.		
Date.	Sums paid and Articles furnished.	£	s.	d.	Date.	Amount of Pay and Allowances.	£	s.
1855					1855			
Jan. 31.	To amount of daily payments	1	19	7½	Jan. 31.	By 31 days' pay at 1s. 1½d.	1	15
"	" hair-cutting, 1d.	0	0	1	"	" 31 days' liquor money, at 1d. . .	0	2
"	" library, 1d.	0	0	1	"	" 31 days' lodging money, at 2d. .	0	5
10	" a new drum-head, 3s. 6d.	0	3	6				
	John Molloy.	£2	3	3½		A. B. Captain.	£2	3 3½

CASE 6.

REMARKS.

Private JOHN MURPHY was admitted into hospital on the 6th January, 1855.

Died on the 25th January, 1855.

Inclusively.

Receives pay for that day, and is charged hospital stoppages.

DR.		No. 1329, PRIVATE JOHN MURPHY.					CR.	
Date.	Sums paid and Articles furnished.	£	s.	d.	Date.	Amount of Pay and Allowances.	£	s.
1855					1855			
Jan. 31	To 5 days' messing, at 7½d.	0	3	1½	Jan. 31.	By 25 days' pay, at 1s.	1	5
"	" amount of daily payments	0	2	1	"	" 25 days' liquor money, at 1d. ..	0	2
"	" 20 days' hospital stoppages, at 10d.	0	16	8	"	" Sale of necessities	1	3
"	" sheets, 2d.; washing, 2½d.	0	0	4½		Balance Dr.	0	7
"	" funeral expenses	1	15			A. B. Captain.		
	Died 25th Jan. 1855.	£2	17	3			£2	17
				3				3

SECTION XVII.—MONTHLY RETURNS.

The following Returns are required from a Company at the end of each month:—

1. The Acknowledgment Roll, showing the debts and credits of the Company, and the number of Bibles and Prayer Books in possession.
2. The Monthly Muster Roll and Pay-list.
3. The Bread and Meat Account.
4. A Return of Sums drawn from the Paymaster.
5. A Return of Sums deposited in, and Sums withdrawn from, the Company's Savings Bank.
6. A Return of Men who have become entitled to additional pay, explaining, whether for length of Service or Good Conduct.
7. A Return of Forfeitures.
8. A Return of Hospital Stoupage.
9. A Return of Transfers, &c.
10. A Return of Defaulters.
11. A Return of Men tried by Court-Martial.
12. A List of Necessaries supplied.

For Regimental or Depot Returns, see Regulations, p. 295.

SECTION XVIII.—TAKING OVER A COMPANY.

AN OFFICER TAKING OVER THE COMMAND AND PAYMENT OF A COMPANY should, before signing the transfer certificate, attend to the following particulars:—

- 1st. That the arms and accoutrements (in use and in store) are fit for service and correctly marked; that each man is in possession of the regulated quantity of ammunition and copper caps; that all claims for clothing or compensation in lieu thereof have been duly settled; that the great coats are in good repair; and the men's kits complete, and properly marked.
- 2nd. That each man has been settled with; and that his pocket ledger has been properly made up and signed.
- 3rd. That receipts are produced, showing that all the Company's bills have been paid.
- 4th. That the men have no complaints or claims unsettled.

An Officer is not expected to take a larger debt than 10s. with a Company, nor more than 10s. with any man handed over, or transferred to him.

SECTION XIX.

REWARDS FOR SERVICE AND GOOD CONDUCT.

1. **ANNUITIES.**—2,000*l.* a year is distributed in annuities (not exceeding 20*l.* each) to Sergeants, while serving, or after discharge, for meritorious service; each recipient is presented with a Silver Medal.* In addition to the above “a further sum of £250 per annum till it reach £2,000” is granted for the purpose of giving rewards to fresh candidates.

COPY FOR THE INFORMATION OF REGIMENTS AND DEPÔTS, &c.—Sir,—Her Majesty having been graciously pleased to extend her previous Royal Warrants for the special purpose of granting rewards for distinguished and meritorious service, and gallant conduct in the field, I am directed to transmit herewith a copy of a Warrant which has been issued for that purpose, and to request that you will immediately make it known to the Regiment under your command. The sergeant to be selected for the annuity of £20 is to be the individual whom you may consider to be most deserving of such a reward, and which, when granted, is at once to be at his own disposal, though he may be still serving. I am further directed to observe that, in selecting individuals for the gratuities to be awarded for distinguished service or gallant conduct in the field, you are not to be fettered in your selection by any consideration as to length of service, the general good conduct of the individual (and especially in the late operations), being alone the qualification to entitle him to this reward.

I have the honour to be, Sir,

Your obedient servant,

To Officers commanding Regiments, &c.,
under Field-Marshal Lord Raglan.

B. HAWES.

2. **SERVICE PAY.**—Twopence per diem extra, after 14 years' Infantry, and 17 years' Cavalry service, applies only to those men who enlisted prior to the 1st September, 1836, and who have not availed themselves† of the privileges of the warrant of that date, which are as follows:—

3. **GOOD-CONDUCT PAY AND BADGES.**—A Corporal, Drummer, or Private having five years' service, his name not appearing in the Regimental Defaulters' Book for the last two years, becomes entitled to 1*d.* per diem, and to wear a distinguishing badge. After 10 years' service, and being in the receipt of 1*d.* good-conduct pay for the last two years, he becomes entitled to a second badge, and 2*d.* per diem. After 15 years' service, and having been in the uninterrupted receipt of 2*d.* good-conduct pay for the last two years, he becomes entitled to a third badge, and 3*d.* per diem, and so on.

The commission of any offence which shall impose the

* A Soldier who has made away with, or pawned, his medal must be tried by Court-Martial.—(Art. 105.)

† They are nevertheless entitled to wear distinguishing marks, or badges, whether they do so or not.

necessity of recording a Soldier in the Regimental Defaulters' Book will, if he be not already in possession of good conduct pay and badge, render him ineligible for the same for two years from the date of such offence; and if he be already in possession of the said pay and distinction, it will subject him to the loss thereof for one year; whilst a second offence recorded within 12 months, will require two years of uninterrupted good conduct, in order to obtain a restoration of such reward. A Soldier, with two or more badges, forfeits one, besides 1*d.* of his good-conduct pay for one year, for each offence; and if he should forfeit *all* his badges and good conduct pay, he can only recover the same by subsequently serving, with uninterrupted good conduct, two years for each badge and penny.

4. When a Corporal is promoted his G. C. pay ceases.

5. When a Sergeant is reduced to the ranks, all the privileges of the good-conduct warrant are restored to him; but the entry of his crime in the Regimental Defaulters' Book, as in the case of a reduced Corporal (*page 20*) necessitates the loss of 1*d.* G. C. pay—(*Horse Guards' Circular, 8th May, 1851*).

6. A non-commissioned Officer cannot be reduced to the ranks except by the sentence of a Court-Martial, or by the order of the Head Colonel of his Regiment.

7. GRATUITIES.—The sum of 30*l.* for a Regiment of 700 rank and file, and 20*l.* for a Regiment under that establishment, is allowed annually, to be distributed (according to the following scale) to those men who, having completed 21 years' Infantry or 24 years' Cavalry service, and never having been convicted by a Court-Martial, are recommended by their Commanding Officer.

	£	s.	d.
To a Sergeant of 10 years' standing, having the above service	15	0	0
To a Corporal of 7 years' standing, having the above service	10	0	0
To a Private having the above service.....	5	0	0

Each man receiving the gratuity is presented with a SILVER MEDAL. (*See note Sec. 17.*)

SECTION XX.—DISCHARGE OF SOLDIERS.

Reg. p. 191.

1. No person can be discharged from the service without the sanction of the Commander-in-Chief.

2. A Soldier may be permitted to purchase his discharge for £20, or less, according to his length of service (*Reg. 199*), but 30 days must intervene from the date of his application

for the *indulgence*, to that of its being forwarded to the Adjutant General, in order to give the man time for re-consideration. No portion of the money is to be received until the discharge is granted.

3. When a Soldier is permitted to be discharged, his Commanding Officer must assemble a Regimental Board composed of

The Officer second in command—President.

The two next in seniority—Members.

for the purpose of verifying and recording his service, &c., &c., so as to enable the Commissioners of Chelsea Hospital to compute his pension.

The Board having made the declaration required by the 145th Article of war, in presence of the Soldier, will proceed to form a document which must agree in every respect with his Attestation and the Regimental Register, showing his *length of service* with all deductions therefrom consequent upon the "Finding" or "Sentence" of any Civil or Military Court (*See Part 2, Sec. 8, p. 9*); likewise all Promotions, Reductions, Service abroad, Wounds, Battles, &c., &c.

The Soldier and his Captain must certify on the face of the proceedings that all accounts between them have been duly settled up to the date of the board. The Surgeon must likewise certify as to the man's state of health; and the *cause of discharge* being recorded, the Board must state its opinion of his General Character, and specify the number of his Good-conduct badges.

The proceedings must be signed by the President and Members, countersigned by the Commanding Officer and Adjutant, and transmitted, together with the attestation and record to the Adjutant General, who will forward a parchment Certificate of Discharge for the man, or order him, if he has claim to pension, to the Invalid Dépôt.

4. When a man is of bad character it is usual to cut off that part of the certificate of his discharge which relates to "conduct."

5. A Soldier is entitled to receive pay until his discharge parchment is handed to him.

6. A non-commissioned Officer, or Private, discharged otherwise than by purchase, receives 1s. a day for 20 days, and for 25 days if he be ordered to Kilmainham; if his pension exceeds 1s. a day he will be paid the difference; he will also be conveyed at the public expense to where he enlisted, or to any other place equidistant.

Royal Warrant, page 24.

SECTION XXI.—PENSIONS.

SOLDIERS enlisted prior to the 1st March, 1833, receive pensions according to the warrant, dated November, 1829; those who enlisted subsequent to that date, receive pensions as follows, per diem for life:—

1. If discharged for wounds, &c., received in action,

Rank.	1st Degree.		2nd Degree.		3rd Degree.	
	To Men rendered as "totally helpless" as to require attendance.		To Men not quite as "helpless" as to require attendance.		To Men rendered unfit for Service but able to earn something.	
	From s. d.	To s. d.	s. d.	s. d.	From s. d.	To s. d.
To a Sergeant .	2 6	3 0	2 9		1 3	1 3
" Corporal .	1 10	2 4	1 6		1 0	1 3
" Private ..	1 6	2 0	1 2		0 8	1 0

In extreme cases of suffering, or for gallant conduct in the field, 6d. more may be added as Her Majesty's royal bounty.

2. If totally blind, from unavoidable causes other than wounds, but occasioned by military service,

	From s. d.	To s. d.
To a Sergeant, having been 5 years Corporal and } 5 years Sergeant	1 3	2 0 a day.
" Corporal (7 years as such)	1 0	1 3 "
" Private.....	0 9	1 0 "

After 14 years' Infantry, or 17 years' Cavalry service, and being *totally blind*, with constitution impaired by foreign service, the daily rate is increased—

For a non-commissioned Officer	4d.
For a Private	3d.

A Soldier cannot be discharged for the loss of an eye only.

3. Men can claim pension on discharge after 21 years' Infantry, and 24 years' Cavalry service, and may receive

From 8d. to 1s. per day.

For each year's service beyond that time, $\frac{1}{2}$ d. will be added to the minimum; but the whole pension must not exceed the 1s. Should a man, however, from disabilities contracted in and by the service, be considered unable to earn a livelihood, the Commissioners of Chelsea Hospital (who, under

sanction of the War Office, compute all Pensions) may grant a temporary increase according to rank.

To a Sergeant, 6d.; a Corporal, 4d.; a Private, 3d.

4. If after 14 years' Infantry, or 17 years' Cavalry service, a man is discharged for "PERMANENT disabilities" contracted by such service, the following rates are allowed, either *permanently* or *conditionally*, according to his case:—

		s.	d.	s.	d.
To a Sergeant	Of at least 5 years as	0	9	to 1	3
	non-commissioned				a day.
" Corporal	Officer.	0	7	" 1	0
" Private	.....	0	7	" 0	9

5. If men, before having completed 21 years' Infantry, or 24 years' Cavalry service, be discharged for *disability* contracted in the service, or in consequence of *reduction*, "*temporary pensions*" are granted of 6d. per diem, for periods varying from 1 month to 5 years.—(*W. O. Reg.* 219.)

In lieu of these pensions, a gratuity of from 1*l.* to 30*l.* is sometimes given.

6. The pensions of non-commissioned Officers, and those of Privates, are computed according to their service after 18 years of age. The former receive the following addition for *each year's* service as non-commissioned Officers:—

	d.	s.	d.
Sergeant-Major	2½		6
Quartermaster-Sergeant	2		3
Colour-Sergeants and Sergeants	1		0
Corporals	0½		6*
Privates .....	...		3

Provided, always that the non-commissioned officer shall have 21 years' Infantry, or 24 years' Cavalry service, and shall have been discharged as a non-commissioned Officer, having served as such without interruption for the *three years* immediately preceding his discharge.

7. For "Deferred Pension."

After actual service of	No. of G. C. Badges.	
14 years.	2	} A free discharge, with right of registry for "Deferred Pension," at 4d. a day upon attaining 50 years of age.
16 "	1	
15 "	3	
16 "	2 { having them 12 months	½ Do. do. but 6d. a day.

* G. C. Pay in addition.

SECTION XXII.—NON-EFFECTIVE.

1. When a Soldier dies, his Captain and two other Officers must take an inventory of his effects, which are to be sold by auction within one month after his decease; the amount they realise must be added to his other credits (if any); and after defraying his funeral expenses (which in no case must exceed 1*l.* 15*s.*), and paying all other regimental debts, the residue must be handed over with the non-effective accounts to the Paymaster, for transmission to his next of kin, through the War Office. When there are not sufficient effects to meet the funeral expenses, they must be defrayed by the Officer Commanding the Company.

The following printed forms are furnished by the War Office, and must be most carefully made out, and duly certified:—

- | | |
|--|-----------------|
| 1st. An inventory of the deceased man's effects | } In duplicate. |
| 2nd. The particulars of the sale thereof | |
| 3rd. A statement of the man's account, showing his debts, credits, and Savings Bank deposits, if any | |

If the deceased has made a will, it must, with his Pocket Ledger, accompany the first set of the above, and a certified copy of it must be kept at the regiment.

2. When a Soldier deserts, a description return must be forwarded to the Secretary-at War. An inventory of his effects* must be taken by his Captain and two other Officers, and the articles sold by auction within *three months* after his desertion, at the discretion of the Commanding Officer: whatever balance remains, after the payment of his regimental debts, must be handed over with his non-effective accounts to the Paymaster for the public. The same rule (as regards the disposal of effects) applies to men delivered up as apprentices (*Cl.* 61), to deserters who have re-enlisted, and to men convicted of felony by a civil court.

3. If a man is recovered to the Service before the expiration of the *three months*, his Commanding Officer has authority to restore to him the whole or a part of his effects.

* The committee on a man's effects should always fix the price at which the knapsack may be re-issued.

PART II.

DISCIPLINE.

THE most important duty of an Officer commanding a Company, or any other body of men, is the maintenance of discipline—instructions for which, and for everything connected with the “interior economy” of a Regiment, are most explicitly laid down in the Queen’s Regulations for the Army, commencing at page 115.

SECTION I.—SUMMARY PUNISHMENTS.

1. The following is a list of summary punishments Commanding Officers of Regiments, and others “duly authorised,” have power to award:—

Nature.	Extent.	Remarks.
Black-hole.	48 hours.	{ May, in aggravated cases, precede Confinement to Barracks or Extra Drills, &c.; but the whole punishment must not exceed one lunar month. — (Reg. 121.)
Confinement to Barracks.	{ 1 month. {	{ Taking all duties, Parades, Defaulters’ Drills, and Fatigues.
Pack Drill.	{ 14 days, with or without Confinement to Barracks. {	{ Attending Defaulters’ Roll-call.
Defaulters’ room.	{ 7 days. {	{ Taking all duties, Defaulters’ Drill, &c.
Drill without Packs.	{ 1 month. {	{ With or without Confinement to Barracks. When it is necessary to award more than six days, it is better to give Pack Drill in a less proportion.
Imprisonment, solitary or otherwise,	{ Any period not exceeding 168 hours, in addition to any other minor punishment. {	{ For absence without leave, or any other offence, which the Commanding Officer of a Regiment may not think necessary to bring before a Court-Martial. The whole punishment must not exceed 1 lunar month.
and	{ Any period not exceeding 5 days, in addition to any other punishment. {	{ For absence without leave not exceeding 5 days. When pay is stopped, it must be for the entire period of absence, including the day of absenting and the day of return.
Forfeiture of Pay.	{	{
Extra guards.	.....	{ Are never to be awarded except for offences or irregularities on, or when parading for, duty.
Defaulters’ drill.	.....	{ May be combined with Confinement to Barracks, to shorten the period of punishment.

2. A Commanding Officer may order a Prisoner's diet to be reduced, or place him on bread and water, and deprive him of his bedding for (not exceeding) 72 hours.

3. Drill must never exceed *one hour* at a time, *four times* a day.

4. A Soldier must not be kept longer than 48 hours in confinement without having his case investigated: under peculiar circumstances, however, that period may be extended to eight days: if, in the mean time, he be not summarily dealt with, he must be released, unless committed for trial.—(Art. 19.)

SECTION II.—DEFAULTERS' BOOKS.

1. THE REGIMENTAL DEFAULTERS' BOOK must be kept by the Adjutant, who is held responsible for the correct entry in it of all crimes for which any of the following punishments have been awarded:—

Nature.	Authority.
7 days' Drill without packs, and upwards	Regulations, page 308. Good-Conduct Warrant.
8 „ Confinement to Barracks, and upwards	
Black-hole	For any period whatever. } Regulations, page 119.
Defaulters' Room	
Pack Drill	
Imprisonment	
Stoppage of Pay	
All crimes tried by Court-Martial.	

2. THE COMPANY'S DEFAULTERS' BOOK must be kept by the Captain; and, besides containing all the crimes entered in the Regimental Defaulters' Book, it must show all those for which minor punishments have been given.

3. All crimes of Drunkenness must be entered with red ink.

4. When the Sentence of a Court-Martial has been *wholly* remitted, the offence is to be considered as pardoned, and the man placed in all respects as if no trial had occurred—(*Horse Guards' Circular*, 16th January, 1849;) but, as by the 16th Clause of the Mutiny Act, Defaulters' Books are now admitted as Evidence in proof of "former convictions," Courts-Martial thus wholly remitted must be entered in both the Regimental and the Company's Defaulters' Books.

SECTION III.—ARTICLES OF WAR.

1. By an Annual Act of Parliament, termed "The Mutiny Act," Her Majesty is empowered to frame "Articles of War" for the better government of Her Majesty's Forces, which are yearly promulgated by the Secretary at War. The book so called is divided into *three* parts, viz.:—

First. The Limited Service Act, which was first passed on the 21st June, 1847.—(See "Enlistment," Part 1, Sec. 1.)

Second. The Mutiny Act, which is passed on the 25th of April every year; it regulates the strength of the Army for that year, and in 104 Clauses provides for all the exigencies of the Service.—(See Cl. 104.)

Third. The Articles of War, 159 in number, all of which are founded on the Mutiny Act.

2. Any alterations which have been deemed necessary in the Mutiny Act or Articles of War of the preceding year, are inserted at the end of the book in *italics*.

3. All the Articles of War marked with an Asterisk must be read to the men every three months.

SECTION IV.—COURTS OF INQUIRY AND
REGIMENTAL BOARDS.

In serious cases referred to him, and requiring further investigation, a General, or other Officer Commanding, may assemble a Court of Inquiry composed as follows:—

1 Field Officer as President.

2 or 4 Field Officers, or Captains, as Members.

In minor cases, the Officer commanding a Regiment may assemble for the same purpose:

1 Field Officer, or Captain, President.

2 Captains, or Subalterns, Members.

FORM.

PROCEEDINGS of a Court of Inquiry, held at —, on the —, by order of —. Dated —.

President, —.*

Members, —.

* It is usual for a Court of Inquiry to make one or other of the declarations prescribed by Articles of War, 144-5, according to the matter brought before it.

The Court, having carefully considered the instructions received from the ——— Commanding, No. ———, of the ——— Regiment, the accused, is called into Court, and the order for its assembly having been produced and read to him, proceeds to examine the following witnesses:—

1st witness against the accused (as in Courts-Martial).

[The Court and Witnesses are *not* to be sworn; the Accused may cross-examine as in Courts-Martial, and when all the evidence against him has been taken, he may make *his* statement of the case, and call in witnesses to substantiate it. All irrelevant matter must be scrupulously avoided.]

The Court is cleared.

[If *no opinion* is required, the proceedings are *here signed* by the President and Members, and forwarded to the Convening Officer, who may reassemble the Court as often as he may think fit, and until he is satisfied with its proceedings.]

or,

The Court having maturely considered the evidence against the Accused, as well as what he has offered in exculpation, is of opinion that, &c., &c.

Signed, { President.
 { Members.

Date ———.

REGIMENTAL BOARDS are minor Courts of Inquiry, convened by Commanding Officers of Regiments, and are detailed as follows:—

1. Board for the discharge of Soldiers (*Horse Guards' Circular*, 14th March, 1851); detail, the *three* senior Regimental Officers.—(See Part 1, Sec. 18, p. 3.)

2. Board for the yearly inspection of Arms and Appointments, and for the monthly inspection of accounts, &c.: detail, as above.

3. Board for ascertaining the cause of a Soldier's absence; detail, 1 Captain, 2 Subalterns, *by roster*. This Board is assembled when a man has been two months absent without leave, and after making the declaration at Art. 145, witnesses are examined, in order to ascertain everything connected with such absence as to time, place, &c.

The Board, having recorded sufficient evidence, will declare its opinion, and the exact period of the man's absence.

4. Boards for other Regimental purposes; detail, 1 Captain, and 2 Subalterns, *by roster*.

All Boards must be signed by the President and both Members.

SECTION V.—COURTS-MARTIAL.

(Mutiny Act, cl. 6, &c.; Regulations 225, &c.)

1. There are three degrees of Courts-Martial, viz. :—

- 1st. The General (*Cl. 7*) ;
- 2nd. The Garrison or District (*Cl. 8*) ;
- 3rd. The Regimental or Detachment (*Cl. 9, 10*) ;

for the constitution and powers of each of which see the Table referring to this subject and Articles of War 116 to 128.

2. The proceeding of all Courts-Martial must be conducted in the following order :—

Order.	Remarks.
1st. The Heading	Comprising the order for the assembly and the detail of the Court. — <i>Mutiny Act, Cl. 14.</i> <i>Reg. 226; Art. of War, 138; Mutiny Act, Cl. 12.</i> <i>Art. 128; Reg. 227, p. 10.</i> <i>Reg. 227, p. 12.</i> <i>Art. 139, 142; Cl. 15.</i> <i>Reg. 227, p. 13; Cl. 29.</i> <i>Ibid.; Mutiny Act, Cl. 16; Art. 129.</i> <i>Reg. 228, pp. 20, 21, &c.; Art. 116, &c.; Cl. 18.</i>
2nd. The Swearing-in of the Court ..	
3rd. The Charge or Charges	
4th. The Plea	
5th. The Prosecution	
6th. The Defence	
7th. The Finding	
8th. Character and former convictions	
9th. The Sentence	

3. When several prisoners are to be tried by the same Court upon separate charges, the President and Members must be re-sworn at the commencement of each case.

4. In General, Garrison, or District Courts-Martial, the members take precedence according to their army rank and date of commissions: in Regimental Courts they rank Regimentally.—(*See Sec. 6.*)

5. When a Prisoner is brought to a Court-Martial, his Commanding Officer must on no account be detailed either as President or Member of it.

6. No man can be tried *twice* for the same offence; and no Court can be “revised” more than once, nor is it legal to take additional evidence on such revision. (*Cl. 13.*)—(*See Sec 8.*)

7. For the Framing of charges see the 128th Article of War. (*Horse Guards' Circular*, 19th Nov., 1849, and 31st Dec., 1850.)

8. When, on account of sickness, &c., &c., any delay occurs in bringing a Prisoner to trial, the cause of such delay must be stated in the application for trial, and also on the face of the proceedings.—(*Horse Guards' Circular*, 25th March, 1851.)

9. When a man is committed for trial, he must be warned that his Former Convictions will be brought in evidence against him; and due notice must be given to him of the day fixed for his trial.—(*Art. 129.*)

10. A Prisoner, on the morning of his trial, must be examined by a Medical Officer, who is required to give a certificate for the information of the Court, stating whether he considers him able to undergo corporal punishment, or imprisonment, solitary or otherwise; this certificate must be attached to the proceedings of the Court.

11. A Prisoner should always be recommended to plead "Not Guilty."

12. A Prisoner must on no account be detained in prison beyond the term of his punishment; and, when practicable, an escort must be sent for him.

13. In trials for Habitual Drunkenness, the evidence required to prove the previous acts of drunkenness, must be given by some competent person on the authority of the Regimental Defaulters' Book, or a certified extract therefrom: and the last instance of drunkenness, constituting the act of "habitual drunkenness," must be inserted in the charge and entered in the Defaulters' Book, or extract therefrom, and given in evidence; the sentence of the Court being the award for such last entry.—(*See Sections 9 and 10.*)

14. When the Proceedings of a General, or a Garrison or District Court-Martial have been promulgated, the Charges, Finding, and Sentence, together with the Remarks of the Confirming authority, and the amount of punishment inflicted, must be entered in the Regimental Court-Martial Book of the Corps to which the offender belongs, and signed by the Commanding Officer; after which the Proceedings are to be returned to the President, and forwarded by him to the Judge Advocate General, London.—(*Ol. 17.*)

The Proceedings of all Regimental Courts-Martial are kept with the Regiment, and are examined at the half-yearly inspection of the Corps.

15. For the Powers of Courts-Martial and the classification of offences, see Articles of War 116 to 127. The 128th Article

prohibits offences which should be tried by a General, District or Garrison Court-Martial, being tried by a Regimental Court, without due authority from the Officer Commanding the District (*see Table at the beginning*).

16. For the trial of Civil offences by Courts-Martial (*see Articles 130, 131. (Horse Guards' Circular, 29th Nov., 1851.)*)

SECTION VI.—THE SWEARING OF THE COURT AND WITNESSES.

1. The members having taken their places according to rank, the senior on the right, and the next in seniority on the left of the President, and so on; the Prisoner, bare-headed (his cap having been taken from him), is brought into Court under an escort.

After the answer to the first question to the Prisoner is recorded (*see Form, Sec. 7*), the President and Members stand up (uncovered, and with their right gloves off): the Members hold the Bible across the table with their right hands, and when the President has said

YOU shall well and truly try and determine according to the Evidence in the Matter now before you. So help you GOD.

each Member kisses the Bible in his turn, saying "So help me God;" then holding the book as before, they repeat the following *oath* after the President.

I, A.B. do swear, That I will duly administer Justice, according to the Rules and Articles for the better Government of Her Majesty's Forces, and according to an Act now in force for the Punishment of Mutiny and Desertion, and other Crimes therein mentioned, without Partiality, Favour, or Affection; and if any Doubt shall arise, which is not explained by the said Articles or Act, then according to my Conscience, the best of my Understanding, and the Custom of War in the like Cases: And I do further swear, that I will not divulge the Sentence of the Court until it shall be duly approved; neither will I upon any account, at any Time whatsoever, disclose or discover the Vote or Opinion of any particular Member of the Court-Martial, unless required to give Evidence thereof, as a Witness, by a Court of Justice, or a Court-Martial, in a due Course of Law. So help me GOD.

In repeating the last sentence, "*So help me God,*" each Member again kisses the Bible.

When the Members are sworn, the Senior hands the Bible to the President, and administers the *oath* to him in exactly the same manner, commencing with the words "You shall

well and truly," &c. All resume their seats, and the Proceedings must be written by one of the Court,* according to the form at Sec. 7.

2. To swear a Witness.

The Witness, being called, goes up to the President and salutes him; takes off his chako and right glove, the President hands him the Bible, saying, "*The evidence which you shall give before this Court shall be the Truth, the whole Truth, and nothing but the Truth.*" "*So help you God.*"

Witness kisses the book, saying, "*So help me God;*" and puts on his chako and glove.

SECTION VII.—SKETCH OF THE PROCEEDINGS OF A GARRISON COURT-MARTIAL.

(Cl. 14, &c., Art. 138, &c.)

[NOTE. In writing the Proceedings of the Court, the words "Question," "Answer," "1st Witness," &c., must be inserted in the margin. The Clauses and Articles of War are merely for guidance.]

Proceedings of a Garrison Court-Martial, held at —, on the — 18—, by order of —, commanding the Garrison, bearing date the — 18—.—(Art. 110.)

PRESIDENT.—(Cl. 13, Art. 115.)

Lieut.-Colonel, Major, or Captain.—(See Table.)

Captain —, — Regt.	Member.	Captain —, — Regt.
Lieut. —, — "		Lieut. —, — "
Ensign —, — "		Ensign —, — "

No. —, Private —, of the — Regt., is brought a prisoner before the Court.

The order for the assembly of the Court having been produced and read, and the names of the President and other Officers appointed to serve on the Court having also been read over in the hearing of the prisoner (Cl. 14), the following question is put by the President to the prisoner.

Question.—Private —, have you any objection to be tried by the President, or by any of the Officers appointed to sit upon your Court-Martial?

Answer.—(Cl. 14.)

* Except in "General Courts-Martial" when the Proceedings are recorded by an acting Judge Advocate-General.

The President and Members being duly sworn (*see form of Oaths, Art. 138*), the Prisoner, No. —, Private —, of the — Regt., is arraigned upon the following charges:—

1st. For having, &c.—(*Art. 128.*)

2nd. For, &c.

(Witnesses retire.)

Question by the Court.—Private —, are you guilty or not guilty of the crimes laid to your charge?

Answer.—

The Prosecution here commences.—(*Art. 139.*)

1st witness, —, of the — Regt., being duly sworn (*Cl. 15*), and the charges read to him, states,—I am, &c., &c.
The Prisoner declines cross-examining this witness.

Question by the Court.—

Answer.—

2nd witness, —, of the — Regt., being duly sworn, and the charges read to him, states,—I am, &c., &c.

Cross-examined by the Prisoner.

Question.—

Answer.—

Question by the Prosecutor.

Answer.—

Question by the Court.—

Answer.—

3rd witness (as above).

The Prosecution here closes, and the Prisoner is put on his defence.

It being four o'clock, the Court is adjourned until ten o'clock to-morrow.*

The Court having met pursuant to adjournment, and the same members being present as yesterday, proceeds with the Prisoner's defence.

DEFENCE.

The Prisoner —, being placed upon his defence, states —, and calls the following witnesses:—

1st witness for defence, —, of the — Regt., being duly sworn, and the charges read to him, states,—I, &c.

Cross-examined by Prosecutor.

Question.—

Answer.—

Question by the Court.—

Answer.—

* This is to be inserted whenever, from the lateness of the hour, it is necessary to adjourn the Court.

2nd witness, —, of the — Regt., being duly sworn, and the charges read to him, is called upon by the Prisoner to depose as to his former character and conduct, and states as follows:—

The Prisoner having closed his defence, the Court is cleared for the purpose of deliberating upon the whole of the proceedings.

FINDING * (*in case of acquittal*).

The Court having maturely weighed and considered the evidence in support of the prosecution, together with what the Prisoner has urged in his defence, is of opinion that he, the Prisoner, No. — Private —, of the — Regt., is "Not Guilty" of the charges preferred against him, and it therefore acquits him of the same.

Approved and confirmed, Signed by the President.
(or otherwise,) dated at —, 18—,
Signed by the Officer convening — o'clock.
the Court,

Dated

FINDING (*in case of conviction*).

The Court having maturely weighed and considered the evidence in support of the prosecution, together with what the Prisoner has urged in his defence, is of opinion that

With regard to the 1st charge, he, the Prisoner, No. —, Private —, of the — Regt., is "Guilty."

With regard to the 2nd charge, he, the Prisoner, No. —, Private —, of the — Regt., is "Guilty."

The Court being re-opened, the Prisoner is again brought before it.

FORMER CONVICTIONS AND GENERAL CHARACTER.

Lieut. and Adjutant —, of the — Regt. (*or other competent person*), being duly sworn, and the charges read to him, is questioned by the Court.

Question by the Court (in cases of desertion).—Did the Prisoner surrender himself, or was he apprehended?

Answer.—

Question.—Has the Prisoner been warned that his former convictions would be brought in evidence against him?

Answer.—Yes. (*If there be not any, it must be here stated.*)

Question.—What record have you to produce in proof of former convictions against the Prisoner?

* In taking the "opinion" of the Court, the President must begin with the Junior Member.

Answer.—On reference to the Regimental Court-Martial Book (or other authenticated document) now laid before the Court, it appears that the Prisoner was tried by a — Court-Martial at —, on the —, for —, of which he was convicted and sentenced to —, of which — was inflicted.

Also by a — Court-Martial at —, on the —, &c. (as above).

Question by the Court.—State what you know of the Prisoner's general character?

Answer.—

Question by the Court.—How long has he been in the Service, and what is his age?

Answer.—

The Court is again cleared.

[Here the Medical Certificate should be read.]

SENTENCE.*

The Court having found the Prisoner "Guilty" of both the charges preferred against him, which being in breach of the Articles of War, and taking into consideration his former convictions (or the absence thereof), and general good (or bad, or indifferent) character, does now sentence him, the Prisoner, No. —, Private —, of the — Regt., to undergo —, at such place† as the Officer approving these proceedings may be pleased to direct.

Signed by the President.

Approved, and confirmed. Dated at —, this — 18—. Signed by the Convening Officer. Hour when signed —.

SECTION VIII.—SKETCH OF PROCEEDINGS IN CASES WHERE THE COURT IS RE-ASSEMBLED IN ORDER TO REVISE ITS FORMER FINDING OR SENTENCE.

Dated at —, this —, 18—.

The Court having re-assembled according to order, and having attentively weighed and re-considered the whole of

* In taking the "vote" of the Court, the President must begin with the Junior Member.

† The term of a Sentence of Imprisonment is reckoned as commencing on the day on which the proceedings of the Court are signed by the President; and in cases where the Court is revised, it dates from the signing of the original proceedings. When Corporal Punishment is awarded, the words "and time" should be here inserted.—(Cl. 38.)

the evidence adduced, both on the part of the prosecution and defence, as well as the observations of the Revising Officer, is of opinion that he, the Prisoner, No. —, Private —, of the — Regt., is "Not Guilty" of the first charge, and does therefore acquit him of the same; with regard to the second charge, the Court is of opinion that the Prisoner, No. — Private —, of the —, Regt., is "Guilty."

The Court does therefore now sentence the Prisoner, No. —, Private —, of the — Regt. to —

(Signature and date as before.)

OR, The Court having, &c. &c., is still of opinion that the Prisoner, No. —. Private —, of the —, Regt., is "Guilty" of both charges preferred against him, and does therefore most respectfully adhere to its former sentence.

Signature of President,—and date.

The order or letter of the Revising Authority, or a copy thereof, should be attached to the Proceedings of the Court.—
(*Horse Guards' Cir.*, 12th Dec., 1844.)

SECTION IX.—ON SENTENCES OF COURTS-MARTIAL.

(See Form of Proceedings.)

1. A General Court-Martial "*only*" can pass Sentence of "Death" (*Cls.* 7–20), "Transportation" (*Cls.* 7–23), "Penal Servitude" (*Cls.* 21–24), or General Service" (*Cl.* 21); when a sentence of Death is passed it must be with the concurrence of at least *two-thirds* of the Court (*Cl.* 20). When "Transportation" is awarded it must be for *at least* 14 years; when "Penal Servitude" for *at least* 4 years.

2. For *any* offence, a General Court-Martial may, *besides* any other punishment, sentence "*To Forfeit all advantage as to Additional Pay, Good-Conduct Pay, and to Pension on Discharge, which might have otherwise accrued from the length of his FORMER service,*" or "*To Forfeit all, &c., &c., which might have accrued from PAST service, or might accrue from FUTURE service;*" but a District or Garrison Court-Martial can only award the above sentence for "Desertion," or for any of the Crimes specified as "Disgraceful Conduct" by *Cl.* 28.

3. General, District or Garrison Courts-Martial have the same unlimited power to award Imprisonment (*Cl.* 8); but for any ordinary offence a District or Garrison Court should not in any case sentence more than *six months'* Imprisonment,

either Simple or Combined.—(*Horse Guards' Circular*, 13th August, 1845.)

4. For the powers of a Detachment General Court-Martial see *Cl.* 11 and its proviso, and *Arts.* 117–120.

5. When a Court finds a non-commissioned Officer “Guilty,” it must, before awarding any further punishment, sentence him “*To be reduced to the Ranks and to the pay of a Private Sentinel.*”—(*Art.* 127.)

6. Courts are recommended to award “Hard labour,” or “Solitary confinement,” or “*both*,” rather than simple Imprisonment; but when SOLITARY Imprisonment is sentenced BY ITSELF, no Court whatever can award more than 14 days.—(*Cl.* 36, *proviso.*)

7. Any Court can, for “Disgraceful Conduct,” “Misbehaviour” or “Neglect of Duty,” sentence a man “*To undergo a Corporal punishment of* (not exceeding) 50 lashes, *at such time and place as the officer approving these proceedings may be pleased to direct*” *Cl.* 25); but the power to combine this punishment with Imprisonment is extended *only* to General, District or Garrison Courts, *not* to Regimental or Detachment.—(*Cl.* 26.)

8. When Solitary Confinement is combined with Imprisonment *with* or *without* “Hard Labour,” the Court must be very careful not to exceed the limits laid down in *Cl.* 36, viz. :—84 days’ Solitary in any one year to be awarded and inflicted at the rate of 14 days’ Solitary at a time per month, if the whole term is *less* than 3 months; or 7 days’ Solitary at a time per month, if the whole term *exceeds* 3 months; but between the periods of Solitary confinement, *at least* an equal period of other imprisonment must intervene.

9. In a District or Garrison Court a Sentence of Mixed Imprisonment must be thus recorded in its Proceedings: “*To suffer an Imprisonment of — Days, — days of which to be Solitary, the remainder with Hard Labour in conformity with Cl. 36 of the Mutiny Act;*” “*and further —*” (as the case may be).

10. The powers of Regimental or Detachment Courts-Martial are detailed in *Art.* 124; a sentence of Mixed Imprisonment” should be worded thus: “*To suffer an Imprisonment of 42 days, the first, (or last) or (the first and last) 14 days of which to be solitary, the remainder with hard labour.*” Of course if the whole term be less than 42 days, it would not be legal to sentence the first and last 14 days to be solitary, as the interval would not be of sufficient duration.

11. When the Medical Certificate states that the Prisoner

is *unequal* to undergo "Hard Labour," the Court should nevertheless sentence "*— days' Imprisonment, with such labour as in the opinion of the Medical Officer of the Prison the Prisoner may be equal to ;*" "*and further —*" (as the case may be).—(*Cir.*, 31st July, 1848.)

12. If found "Guilty of Desertion" (see Section 10, par. 1), besides any of the foregoing punishments (excepting corporal punishment, which is not sanctioned for this crime), the Court *must* sentence "*To be marked with the letter D, in conformity with the 35th clause of the Mutiny Act,*" "*and further*" (as the case may be); but when the Court refrains from marking a Deserter on account of his youth, inexperience, or any other mitigating cause, the President must state the reasons in a letter to be forwarded with the Proceedings to the Convening Officer. A Deserter is liable to be marked with the letter D on every subsequent conviction of desertion (*Cl. 35*); but should the Medical Certificate state that he is already "*indelibly marked,*" the Court must not sentence him to be marked again.—(*Horse Guards' Circular*, 5th March, 1853.)

13. When a man is convicted of several charges, the sentence of the Court must be in reference to that which is the most serious; *i. e.* if the first charge is for Desertion, and the second for Selling or Losing Necessaries, corporal punishment cannot be awarded, for although this degree of punishment is sanctioned for the *second* charge, it is not so for Desertion, which is the greater offence.

14. When loss of necessaries or damages are to be made good, the Court must sentence "*— and further, to be placed under stoppages until the cost of the articles (or damage*) specified in the Charge, viz. (here enumerate them) be made good, according to the provisions of the 33rd Clause of the Mutiny Act.*" Although the prisoner may be undergoing a similar sentence at the time, or the loss of 1d. per diem for "Habitual Drunkenness," or "Drunkenness on Duty."—(*Arts. 77, 78.*) (*Horse Guards' Cir.*, 9th May, 1851.)

15. In cases of "Habitual Drunkenness" the Court *must* sentence, *before anything else*, "*To be deprived of 1d. a day of his pay, according to the 78th Article of War.*"—(*Horse Guards' Circular*, 9th May, 1851. See also next Section on Forfeitures.)

* Except in cases of loss of necessaries or appointments, the cost of any other loss or damage must be named in the charge, ascertained by evidence and specified in the sentence of the Court.—(*Art. 122.*)—(*Horse Guards' Circ.*, 9th May, 1851.)

SECTION X.—FORFEITURES.

A Soldier becomes liable to forfeiture of Pay, Pension, or Service under any of the following circumstances:—

- | | | |
|--|------------------|---|
| <p>1. To "Forfeiture of all advantages as to Additional Pay, Good-Conduct Pay, and of Pension on Discharge, which might have otherwise accrued from the length of his former Service," or "Forfeiture of such advantage absolutely, whether it might have accrued from <i>past</i> Service, or might accrue from <i>future</i> Service," according to the nature of the case.*</p> | <p>Optional.</p> | <p>1st. If convicted by a General Court-Martial of "any crime."—(Cl. 26.)</p> <p>2nd. If convicted by a District or Garrison Court-Martial of "Desertion," or of "Disgraceful Conduct."—(Cl. 28.)</p> |
|--|------------------|---|

The finding of "Guilty" of Desertion, or Malingering, (Art. 84) by a Court-Martial, or of Felony by any Civil Court, causes *in itself* the loss of all advantages which might have accrued from *past* service; but should it be deemed necessary to deprive a culprit of all advantages which might accrue from *future* service, the Court must state it in its sentence.

- | | | |
|--|------------------|--|
| <p>2. To be deprived of 1d. a day of his Pay for <i>thirty</i> days.—(Cl. 31.)</p> | <p>Optional.</p> | <p>If convicted by any Court-Martial of Drunkenness on or for Duty, or on the line of March.</p> |
|--|------------------|--|

When the crime of "Drunkenness on Duty" forms part of a charge of "Habitual Drunkenness," the Sentence of the Court must be in reference *only* to the latter.

- | | | |
|--|--------------------|---|
| <p>3. To "Forfeiture of 1d. per diem of his pay for a period <i>not less</i> than 6 lunar months, and <i>not exceeding</i> 2 years."—(Cl. 32.)</p> | <p>Imperative.</p> | <p>If convicted of "Habitual Drunkenness by a District or Garrison Court-Martial."—(Art. 78.)</p> |
|--|--------------------|---|

- | | | |
|---|--------------------|--|
| <p>4. To Forfeiture of 1d. per diem of his pay for a period not less than 30 days, and <i>not exceeding</i> 6 lunar months.</p> | <p>Imperative.</p> | <p>If convicted of "Habitual Drunkenness" by a Regimental Court-Martial.</p> |
|---|--------------------|--|

Should a Soldier, while undergoing sentences of Forfeiture

* A Man's Service, &c., may be restored to him for subsequent Good Conduct on the special application of his Commanding Officer.

to the amount of 3*d.* per diem, be again convicted of Drunkenness by a Court-Martial, such Court cannot award further forfeiture.—(*Cl.* 32—*Art.* 78.)

Although a Court must specify that the Forfeiture it has sentenced a prisoner to shall be deducted from his “daily pay,” yet should he, while under forfeiture, be on board ship, or stationed where Liquor forms part of his daily ration, he must be deprived of such Liquor instead of the 1*d.* per diem.

5. To Forfeiture of the full amount of his daily pay for any period not exceeding 5 days.	Optional.	{ By order of his Commanding Officer for each day of Absence without leave.
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A Soldier found “Guilty” by a Court-Martial of *any* absence without leave, “thereupon” forfeits the whole of his pay for the period of such absence.

6. To Forfeiture of the full amount of his daily pay, but allowed 6 <i>d.</i> per diem as subsistence.	Imperative.	{ 1st. While in the Guard Room, previous to trial, if found “Guilty.” 2nd. During the whole term of any Imprisonment <i>whatever</i> .—(<i>Add.</i> p. 27.)
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When a prisoner is “acquitted,” or when the sentence of the Court is *wholly* remitted by competent authority, he must be credited with the full amount of his pay for the time he was in Confinement or under Arrest, but debited with the subsistence issued.

A Soldier forfeits both *pay and service* for imprisonment by sentence of Court-Martial, and *pay only* when imprisoned by his Commanding Officer for any period not exceeding 7 days.—*Cl.* 30.

When a Soldier is sentenced by Court-Martial to imprisonment and forfeiture of pay, such forfeiture must not commence until after his release; if again imprisoned before he has completed the former sentence of forfeiture, such imprisonment must not reckon toward its accomplishment.

7. To Forfeiture of 1 <i>d.</i> per diem of his Good-Conduct Pay.	Imperative.	{ For each crime entered against him in the Regimental Defaulters’ Book.
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8. To Forfeiture of 12 <i>d.</i> , to be deducted from his next pay, according to the 36th Article of War.	Imperative.	{ If convicted by a Regimental or other Court-Martial of Absence without leave from Divine Service, or for Profanation.
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MILITARY EXAMINATION.

MISCELLANEOUS.

SECTION I.—BARRACKS.

The cubical space allowed for each man is—

In Barracks, from 450 to 500 cubic feet.
In Hospital, „ 600 „ 700 „

1. PERIODS OF ISSUE OF BARRACK FURNITURE, PRICE, &c.

Description of Article.	Price.	When issued.	No. for each man.	Re- marks.
	£ s. d.			
Paillasses . . .	0 3 3	Every 6 months	1	General Order dated 30th May, 1840.
Bolster-cases . . .	0 0 8	" 4 "	1	
Blankets . . .	0 6 2	" 12 "	2	
Rugs . . .	0 4 4	" 12 "	1	
Sheets . . .	0 2 0	" 1 "	2	
Leather paillasse strap	0 0 10	...	1	
Standing iron bedsteads	1 0 0	...	} 1	
Folding ditto	1 6 0	...		
Straw	" 2 "	24 lbs.	

2. WEEKLY ALLOWANCE OF COALS, CANDLES, AND WOOD FOR ONE ROOM.

Date.	Coals.		Candles.	Wood.	Remarks.
	In-land.	Sea.			
	lbs.	lbs.	lb.	lbs.	
From 1st May to 31st Oct.	175	140	1½	3	Every 12 rank and file are entitled to allowance for one room; a Field Officer to two rooms. Any other Officer one room; but if stationed singly in Barracks, he may receive 150 lbs. Inland, or 120 lbs. Sea Coal for cooking.
„ 1st Nov. to 30th Apr.	325	260	1½	3	
G. O. Aug. 1849.					

SECTION II.—DUTIES.

DUTIES OF AN OFFICER ON DETACHMENT.

An Officer commanding a detachment must in every respect conform to the *Standing Orders* of his Regiment, as regards parades, interior economy, discipline, &c., &c.—(*Regulations*, 115, &c.)

When the Paymaster cannot attend, the Officer commanding the Detachment must take the muster of his men on the last day of the month; and, after signing the usual declarations at the foot of the Pay-list, certifying that the muster was taken in his presence, and that the charges are correct, he must forward it without delay to Head-quarters.

On arriving at his station, the Officer must cause the credit of his Detachment to be cried down.—(*Art. of War*, 7.)

Most of the instructions laid down in the Queen's Regulations, at page 271 and following, are applicable to Officers on Detachment.

All the necessary documents and information, together with the money required for the use of the Detachment, will be supplied by the Paymaster.

DUTIES OF OFFICERS ON BOARD SHIP.

For everything connected with this subject, see Regulations, page 337 and following. For the Embarkation and Disembarkation of Troops, see Regulations, page 325, &c.—*Horse Guards' Circular*, 13th Dec., 1848; 19th Sept., 1853.

DUTIES IN GARRISON.

(See *Reg.* page 257, Guard Mounting, *Reg.* page 260.)

DUTIES IN CAMP, ON OUTPOSTS, ADVANCED PICKET, &c.

(See *Reg.* pages 267 and 271, more particularly paragraphs 50 and 51.)

SECTION III.—RIOTS.

(*Reg.* page 207.)

1. When troops are called out in aid of the civil power, the Officer Commanding, *must immediately* announce the fact, by TELEGRAPH if possible, to the Military Secretary, as also the arrival of the Troops on the spot; and he must continue to report, by letter, the progress and completion of the Service.

2. Troops must not be sent out except upon the "*written*" requisition of a Magistrate, and not even then until the rioters have been warned that, if required to do so the Troops will "fire" ball cartridge.

3. The Magistrate ~~must~~ accompany the Troops, and the Officer Commanding must remain near him.

4. All words of Command must be given by the Senior Officer, who is *on no account* to give the word to "Fire," until most *distinctly* and *openly* required to do so by the Magistrate in person.

5. The Troops must be told off into sections of not more than *five files each*; only one, or part of a section must be allowed to fire at a time, each section receiving its separate word.

6. The moment order is restored, the Officer Commanding must not allow another shot to be fired, even at the request of the Magistrate. That Officer best fulfils his duty who attains his object with the least amount of human suffering.

RIOTS BETWEEN SOLDIERS AND CIVILIANS.

1. The Troops must be called under arms and ~~remain~~ so until the Magistrate reports that order has been restored. The Roll must be called to ascertain that all the Soldiers, excepting those who may be in custody of the civil power, have returned to quarters.

2. A Patrole must on no account be allowed to interfere in any riot, and it is ~~against~~ the law to rescue, or attempt to rescue, or oblige the police, or other civil authority, to give up any soldier, or other individual they may have thought proper to arrest or detain.

3. When an assault is made upon soldiers by civilians, the Officer Commanding must, on no account, take the law into his own hands, but complain immediately to the Civil Authorities; both he and his men must remain *under arms* in barracks, and he is forbidden to rescue or protect the soldiers, unless required to do so by a Magistrate or other civil power.—(*Reg.*: page 141, p. 117. *Horse Guards' Circular*, 2nd April, 1845.)

SECTION IV.—HOW TO PUT A BATTALION THROUGH THE MANUAL AND PLATOON EXERCISE.

The Battalion having been handed over (with its ranks closed, arms ordered, bayonets fixed, and standing at ease), to the Officer called upon to put it through the Manual and Platoon Exercise, he must give the following words of command :—

Battalion Attention. 1.*	Present, arms. 3.	March. 1.
Shoulder, 1, arms. 1.	Shoulder, arms. 2.	
Rear rank take open order	Port, arms. 1.	
(allow time for covering).	Charge, bayonets. 1.	<i>Platoon Exercise.</i>
March.	Shoulder, arms. 2.	Prepare to load. 3.
Order, arms. 3.	Advance, arms. 4.	Load. 4.]
Unfix, 1, bayonets. 5	Order, arms. 3.	Rod. 2.
(allow time).	Advance, 1, arms. 2.	Home. 4.
Shoulder, 1, arms. 1.	Shoulder, arms. 3.	Return, 2.
Officers take post of exercise in the rear.	Support, arms. 3.	Cap. 5.
Quick march.	Stand at ease. 1.	Ready. 2 (allow time for firing the sight).
Halt—Front.	Attention. 1.	Present. 1 (allow time).
Secure, arms. 3.	Carry, arms. 3.	Load (in quick time, and when the men have completed their capping).
Shoulder, arms. 3.	Slope, arms. 1.	Shoulder, arms. 2.
Order, arms. 3.	Stand at ease. 1.	Order, arms. 3.
Fix, 1, bayonets. 3.	Attention. 1.	Stand at ease. 1.
Shoulder, 1, arms. 1.	Carry, arms. 2.	
	Rear rank take close order.	

SECTION V.—RULES FOR FINDING THE NUMBER OF PACES REQUIRED FOR A GIVEN NUMBER OF FILES.

Multiply the number of files by 7, and divide by 10, for paces. Multiply the figure cut off by 3, for inches.

EXAMPLE.	
30 file.	28 file.
7	7
<hr/>	<hr/>
21,0 Ans. 21 paces.	19,6
	3
	<hr/>
	18 Ans. 19 paces ; 18 inches.

Or, take $\frac{3}{4}$ of the number of files, and add an inch for each file.

* The figures mark the number of motions in each manœuvre, and when performed.

SECTION VI.—MARCHING.

(Reg. p. 179.)

General Craufurd's standing orders for the March of the Light Brigade of Wellington's Army are those now in force in the Army under Lord Raglan: every Officer should procure a copy of these orders, and make himself master of this most essential part of his profession.

The following are a few of the leading points:—

1. When a Corps has received an order to march, an Officer must be sent on, when practicable, twenty-four hours before it leaves, to take up quarters for it; another Officer must follow him, so as to arrive at the station at 10 A.M. on the day the Corps marches, in order to receive the quarters over from the first Officer, who then goes to the next station on the same duty.

The Quartermaster Sergeant and a Camp Colourman per Company, start *an hour and a half* before the Regiment, and take up, for their respective Companies, the quarters pointed out to them by the second Officer, who in his turn proceeds to the next station; and so on.

2. The *first bugle* sounds *an hour and a half* before the march. Tents struck, horses, mules, and carts to be packed, at least ten minutes before the next bugle sounds.

The *second bugle* sounds one hour after the first, for Companies to turn out.

The *third bugle* sounds (the assembly) a *quarter* of an hour after the second, when *all* are to "fall in" on parade, except the Batmen, who are to be with the baggage, and are held responsible that it is kept together.

3. A Regiment should always march off at "attention." In "marching at ease," Majors fall to the rear of their Wings, and Captains to the rear of their Companies; the pivot files *only* march at "attention;" the Officer orders, from time to time, "change pivots," when the next files take their places; at the word "attention," the Officers and the *proper* pivot files resume their stations.

4. "Halt, "pile arms," and rest for five minutes every hour; always contrive to halt where there is water at hand; allow the men to fall out in rear of their arms; and no knapsack is to be taken off without the Captain's permission.

5. Before marching out, Captains must provide themselves with a number of tickets, as follows :—

— *Reg.* — *Company.*

The Bearer not being able to keep up with his Company, has leave to fall out.

Date

(Signed)

Captain.

Any man falling out must leave his musket and knapsack with his Section.

"Tickets must not be granted, except in cases of great fatigue or illness ; and any man falling to the rear without one must be confined.

6. The "Front" of a Company, &c., must not be diminished, except by word of command passed from the head of the column ; no stepping aside or defiling to avoid water or any other bad spot on the road ; but, on the contrary, it is advisable, whenever possible, to increase the Front and pass obstacles at "attention."

7. On arriving at a station, an "alarm post" must invariably be established, and the men ordered to assemble there for evening parade.

DEGREES AND RATE OF MARCHING.

Slow time, 75 paces of 30 inches each, per minute.

Quick time, 108

Double time, 150 „ 36 „ „

Back step 30 inches each (slow time).

Side step 10 „ (quick time).

The rate of marching, at the usual quick pace, is 3 miles 120 yards an hour ; but men fully equipped, and carrying camp-kettles, blankets, &c., &c., cannot march at this rate for any length of time ; the average rate may be fixed at $2\frac{3}{4}$ miles an hour. Except on a "forced march," or in lighter marching order, we have seldom, on service, seen this exceeded ; but now that lighter knapsacks, arms, and accoutrements are given to the men, and when some better article shall be substituted for the present weighty and cumbersome water-keg, the Infantry soldier will easily accomplish an average of three miles an hour in moderate weather.

THE ORDER OF MARCH.

Advance Guard.

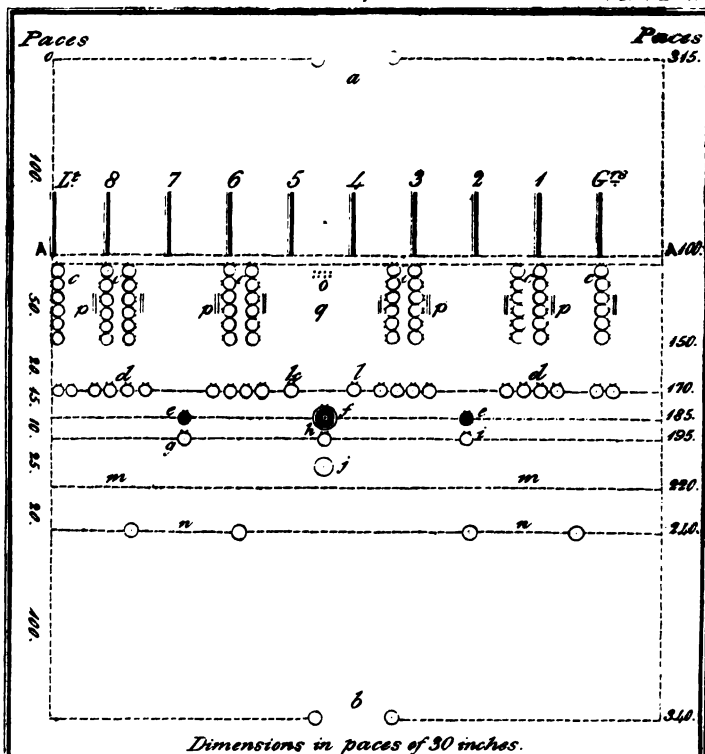
Flank Guard.	{	1st, Infantry.	}	Flank Guard.
		2nd, Artillery.		
		3rd, Baggage.		
		4th, Cavalry.		

Rear Guard.

Camp of a Reg^t of the Line

For 10 Companies of 90 Rank & File.
at 21 inches per File.

PLATE I.



Dimensions in paces of 30 inches.

aa. Magistral Line.
 a. Quarter Guard.
 b. Rear Guard.
 c. Men's tents.
 d. Officers' tents.
 e. Field Officers.

f. Com^d Officers' tents.
 g. Pay-Master.
 h. Surgeon.
 i. Quarter-Master.
 j. Mess tent.
 k. Orderly Officer.

l. Adjutant's tent.
 m. Officers horses.
 n. Kitchens.
 o. Drums.
 p. Arms piled.
 q. Parade.

PART III.

CASTRAMETATION.

SECTION I.—RULES FOR ENCAMPING.

1. THE situation selected for a Camp, should be healthy, not liable to be flooded, well provided with water, and should have a good supply of wood and forage near it.

2. On service a Camp should be rendered capable of defence, its flanks should be well protected, and, if possible, defended by a village or river.

3. The Camp of a Regiment should occupy the same space in front as the Corps would when wheeled into line.

4. There should be ample space left in front of the Camp for manœuvring.

5. The Hospital tents should be placed in the most convenient positions.

6. For the Duties, &c., in Camp, see "Regulations," p. 267.

7. The greatest precautions are necessary to prevent the occurrence of fire; the number of kitchens must be very limited, the ground in their vicinity thoroughly cleared, and a ditch should be cut round each of them.

8. TO MAKE KITCHENS.—Dig a trench about six feet long by one foot wide and one and a half deep, make a small mud chimney at one end, and place sods of turf across the trench, leaving sufficient space between them for the Camp kettles to fit into; a sod placed over these spaces when the kettles are removed, will keep the fire smouldering until again required.

SECTION II.—ON THE SEVERAL WAYS OF FORMING A CAMP.

1. No precise rules can be laid down for the formation of Camps, as so much must depend on the nature of the ground; the usual plans are those shown in the annexed plates, but

we recommend the adoption (when practicable) of the Open Column Camp, that is, having the tents pitched on the prolongation of each Company as it stands on parade in open Column Right in Front; thus each Company will be separate, and have the entire space in its Front to itself, for the cleanliness of which it can be held responsible. This mode of encampment, being more open, is healthier than any other.

2. TO FORM A DOUBLE ROW CAMP. — The Regiment in line is formed into "Open column right in front;" then—

Grenadiers and Light Company stand fast.

No. 2 Company closes on No. 1.

No. 4 " " No. 3.

No. 5 " " No. 6.

No. 7 " " No. 8.

Nos. 5 and 7 Right about Face.

Nos. 2, 4, 6, 8, and Light Companies, Countermarch.

3. TO FORM A CONTRACTED CAMP.—The Regiment as before. "Left subdivisions, left face;" "left counter-march;" "file in rear of right subdivisions;" "halt;" "front." The tents are pitched as the subdivisions stand facing outwards. (See *Plate 2, Fig. 2*).

SECTION III.

The following Instructions for pitching and striking tents have been lately issued:—

"INSTRUCTIONS.

"1. Whenever possible, the Quartermaster, or an Officer acting for him, with a non-commissioned Officer and a Camp Colourman per Company, will precede the Corps to be encamped.

"2. This Officer will take up ground for the companies' and the officers' and other tents, &c., according to the directions he may have received, to conform to one or other of the methods laid down in the 'Regulations for Encampments,' marking by a picket the spot to be occupied by each tent pole, and taking care that the lines of the tents are perpendicular and correctly covered.

"3. Before arriving in camp, the men will be told off for their several functions as 'pole men,' 'peg men,' and 'unpackers of tents,' two men being allotted for each of these duties, and six in all for every tent. More than this number only impede each other.

"Each tent requires, therefore, one section of threes to pitch or strike it.

"4. From the remainder of the company the parties will be told off for 'provisions, wood, water, fire, guards and pickets,' and for the pitching of the officers' orderly-room, store-room, guard-tents, &c.

"To each tent, as far as possible, a non-commissioned Officer will be told off.

"5. It is known that the soldiers' tent, with its cords, occupies a space of nearly six yards,—that is, between 7 and 8 paces from pole to pole.

"6. The polemen, being stationed at the spots indicated by the pickets, the pole is lowered, and the cap of the tent fixed on, and all things prepared for raising the tent. On the signal, or word of command, the whole of the poles are raised together, the skirt of the tent being lifted over the poleman's head.

"7. It will be remembered that, to insure stability, four of the cords which divide the circumference accurately into quarters must be first made fast before any of the others.

"8. Each cord must be stretched on the true prolongation of the tent-seam.

"9. The slides must be made fast at an equal distance from the tent and the ground peg, so as to permit shifting, as expansion or contraction of the cord ensues on atmospheric changes.

"10. The non-commissioned Officer sees that the door is properly placed, and attends especially to the fastenings of the first four pegs, with a view to the general uprightness of the pole and security of the tent, under the general superintendence of the company's officers; one being stationed at the flank, the more easily to detect and correct errors.

"11. In order to strike the tents, all the pegs are drawn except the four first driven, and four men place themselves at these in readiness for the signal; they draw these pegs, and hold down the tent till the signal be given.

"12. On the signal, the polemen lower the poles to the rear, and come out by the door, bringing the poles with them.

"13. In rolling up the tent the cap is turned on one side in such a manner as shall make it visible at one end

when the tent is rolled. This prevents the cap from cutting the tent."

14. The men of each Company are told off, fifteen to a tent.

15. The tents should not have more space between them than is necessary to adjust the ropes, and their openings should face as the Company stands.

For the distances between the different rows of tents, see *Plates*.

SECTION IV.—TO COMPUTE THE FRONT OF A CAMP FOR 850 RANK AND FILE.

From 850 Rank and File
 Deduct 20 Bandmen,
 11 Pioneers (1 per Company, and 1 Corporal),
 50 Sick (say 5 per Company),
 5 Hospital Orderlies,
 4 Batmen (2 extra per Company if in the Field),
 50 On Guard (say 5 per Company),

710 = 355 File.
 Add 10 Captains in line,
 1 Subaltern on the left,
 2 Officers with colours,
 1 Centre Sergeant

369 File, at 21 inches each = 258 paces, 9 inches.

Consequently 259 paces will be the front required for the Camp of a Battalion of 850 rank and file. (See *Plate 2*.)

Tents must be drawn for the full strength of the Corps at the rate of one to every fifteen men, and one for each Officer; but during the present war, the Subalterns are two in a tent. (See *Plate 1*.)

Fig. 1.

A BATTAL OF 850 MEN
Encamped in open Column.

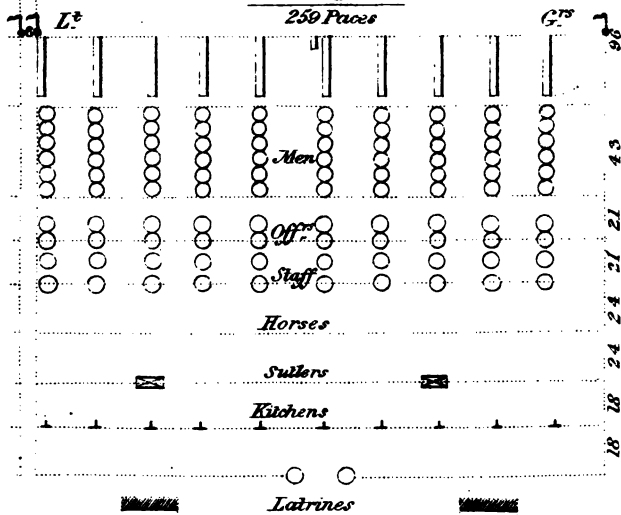
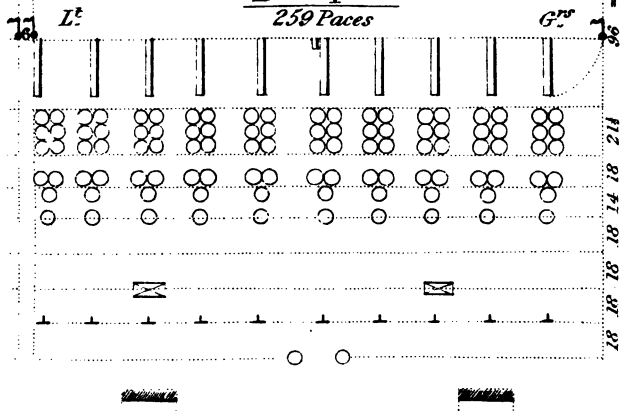


Fig. 2.

A BATTAL OF 850 MEN
Camp Compressed.



SECTION V.—DAILY FIELD ALLOWANCE GRANTED TO OFFICERS IN CAMP OR UPON ACTIVE SERVICE,

And which is paid quarterly in advance.

	A. Ordinary Allowance, Home or Colonial.		B. Extraordinary Allow- ance on Active Service.	
	s.	d.	s.	d.
To a Field Officer	2	6	4	6
„ Captains and others rank- ing as such.....	1	6	2	6
„ Subalterns	1	0	1	6
Regimental Staff ranking as such	1	0	2	0

SECTION VI.—SUPPLY OF TENTS.

1. A Field Officer is supplied (when practicable) with a Marquee,* other officers with one Flanders or one Bell tent each. Every 15 men one Bell tent, 17 feet diameter.

2. Tents, paillasses, blankets, kettles, water-kegs, bill hooks, canteens, haversacks, and intrenching tools, and all Munitions of War are supplied by the Ordnance Department under the Secretary of War.

3. SIZE OF TENTS.

Field Officers and Captains	35 feet by 28.
Subalterns.....	31 feet by 24.
Bell tent for fifteen men.....	17 feet diameter.

SECTION VII.—SUPPLY OF FOOD, FUEL, &c.

1. The Commissariat Department supply all rations of food, fuel, straw, and forage, and have charge of the Military chest, and provide all transport.

2. Daily supply of Food to each officer and soldier,

1½ lb. of bread and ¾ lb. fresh meat; or,
1 „ biscuit and 1 lb. salt meat;

for which the Officer is charged 1½d., and the Soldier 3½d. (if abroad). *Part I., Sec. 11.*

* On the present campaign all the officers are in bell tents like those supplied to the men.

3. A ration of Fuel consists of 3 lbs. of wood or coal.

A Commanding Officer receives ..	8	ration	a day.
A Major, Paymaster or Surgeon ..	4	"	" each.
The Officers of each Company	8	"	"
An Adjutant, Assistant-Surgeon } or Quartermaster	2	"	" each.
To Soldiers	1	"	"

When Coal is issued, grates and baskets are supplied by the Ordnance Department.

4. If paillasses are issued, one truss of Straw 36 lbs. to each paillasse for two men, refreshed by half a truss every 16 days, and to be renewed every 32 days; or if without paillasses, 2 trusses for 5 men, refreshed by 1 truss every 8 days, and renewed every 24 days.

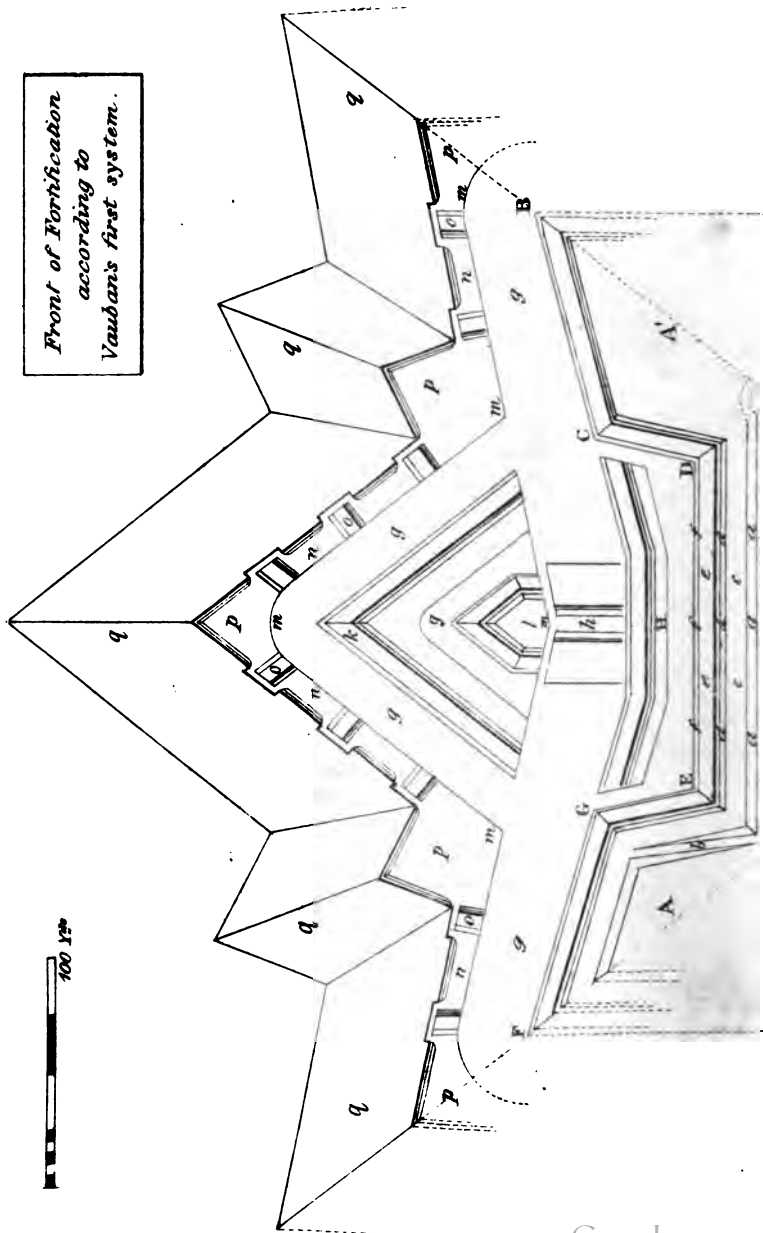
Oat straw is the best for Camp purposes. As it is advisable to convert the loose straw into mats, the whole allowance may be issued at one time, viz. 4 trusses per 5 men; the Camp will thus be less littered, and less liable to take fire.

Rations are allowed to private servants at the rate of 2 per Company, and to 1 washerwoman per 20 men; 5 trusses of straw are allowed per Company, every 16 days, for their bedding.

For Hospitals the allowance is unlimited.

On forming a Camp, 30 trusses per Company are granted for thatching the women's huts.

*Front of Fortification
according to
Vauban's first system.*



PART IV.

FORTIFICATION.

(See Plate 3.)

A	A Bastion (<i>empty</i>).
A'	A full Bastion.
B C	The Face of the Bastion.
C D	The Flank of the Bastion.
D E	The Curtain.
B	The Salient or Flanked Angle of Bastion.
C	The Shoulder Angle.
D	The Curtain Angle.
B F	One side of the Polygon of Fortification.
B C E, F G D	The Lines of Defence.
G E B, C D F	The Angles of Defence.
H	The Tenaille.
a a a	The Interior Slope of Rampart.
b b	The Ramp.
c c	The Terreplein of the Rampart.
d d d	Banquette and Slope.
e e	Parapet and its interior Slope.
fff	Exterior slope of Parapet and Escarp.
g g g	The Ditch.
h	Caponnière.
k	The Ravelin.
l	Redoubt in Ravelin.
m n	The Counterscarp.
n n	The Covered-way.
o o o	Traverses in Covered-way.
p p	Places-of-Arms.
q q q	Glacis.

SECTION I.—DEFINITIONS.

1. THE POLYGON OF FORTIFICATION is the Polygon, either regular or irregular, which is supposed to enclose the ground to be fortified.

2. A FRONT OF FORTIFICATION is all the works constructed upon one of the sides of the polygon—as the polygon is regular, or irregular, so is the fortification termed.

3. THE TRACING is the outline and direction given to the defences, showing how the works are to be laid out.

4. THE ENCEINTE, or body of a place, includes all the works constructed upon the polygon.

5. RELIEF applies to the several heights of works, but

more particularly to the measurement from the bottom of a ditch to the crest of the parapet.

6. THE PLANE OF SITE is the general level of the ground upon which a work is constructed (A A*).

7. THE PLANE OF DEFILEMENT is a plane parallel to the above, supposed to pass through the crest of a work.

8. A SECTION is the cut made by a plane passing through a work in any direction.

9. A PROFILE is when the cut is vertical and perpendicular.

10. A GROUND-PLAN is when the cut is horizontal at the base of the work.

11. THE DEBLAI is the "hollow" made for a ditch or an excavation.

12. THE REMBLAI is the earth required to form the works and is produced by the Deblai. As earth increases in bulk by being broken, the "Remblai" becomes greater in proportion to the deblai as follows:—

In hard soil.....	1 foot in	8 of deblai.
„ ordinary soil.....	1 „	10. do.
„ loose soil.....	1 „	12 do.

To calculate the "Deblai"—deduct $\frac{1}{3}$ or $\frac{1}{4}$ or $\frac{1}{5}$ from the Remblai, and the Deblai will be equal to the remainder of the Remblai.

13. COMMAND is the superior height of one work, or hill, or level, above another.

14. ENFILADE means, when a work is exposed to the raking fire of the enemy.

15. To DEFILADE is so to dispose the height and direction of the different parts of a fortification as to prevent the work being commanded or enfiladed.

16. A RAMPART is formed with the deblai thrown inwards, and consists of an interior slope, a terreplein, a banquette, a parapet, and exterior slope.

17. THE INTERIOR SLOPE OF THE RAMPART (B) is the inclination given to its inner face. The base of its profile should not be less than its height.

18. THE TERREPLEIN (C) is the level portion of the rampart, which remains after the formation of the parapet and banquette.

19. THE BANQUETTE is a step raised on the terreplein of the rampart to enable musketry to fire over the parapet. It is the "slope of the banquette," where one man of a file gene-

* The references are all to Figure 1, Plate 5, unless otherwise named.

rally loads, while the other stands on (E) "the tread of the banquette" to fire.

20. **RAMPS** are roads cut in the interior slopes of ramparts for the purpose of allowing the passage of guns, ammunition waggons, &c.

21. **THE PARAPET** is a shot-proof shelter, formed of earth or masonry, on the outer edge of the rampart; its height is usually from $7\frac{1}{2}$ to 8 feet above the terreplein, and from 9 to 18 feet thick when of earth (to resist field guns 9 to 24 pounders).

22. **THE INTERIOR SLOPE** of the parapet has a base not exceeding $\frac{1}{4}$ of its height (F).*

23. **THE SUPERIOR SLOPE** of the parapet (G) should have an inclination of 2 inches per foot; a line drawn from it should cut the crest of the counterscarp.

24. **THE EXTERIOR SLOPE** of the parapet should have a base equal to its height; when the soil is bad, the parapet is sometimes constructed about 18 inches from the outer edge of the rampart, the space thus left is called the **Berm**. (See Plate 5, Fig. 2.)

25. **THE DITCH** surrounds the whole extent of the works; the side nearest the place is called the **Escarp**, and the other the **COUNTERSCARP**.

26. A **BASTION** is a work composed of two faces and two flanks,—where the two faces meet is the flanked angle of the bastion; where the faces and flanks meet are the shoulder angles; and where the flanks and curtains meet are the curtain angles.

27. **THE LINES OF DEFENCE** are lines drawn along the faces of each bastion to their opposite curtain angles.

28. **THE ANGLE OF DEFENCE**† is that formed by the meeting of a line of defence and a flank. When an angle cannot be defended, it is called a "dead angle."

29. A **FLANK** is that part of a work which defends another, and no work can be accounted strong which is not well flanked. (Pl. 4, Fig. 4.)

30. A **SALIENT ANGLE** is that which points towards the country, it should never be less than 60° and not exceed, if possible, 90° . (Pl. 4, Fig. 3.)

31. A **RE-ENTERING ANGLE** is one which points inwards;

* In the figure, the interior slope terminates with the banquette, but where guns are used there is no banquette; and the interior slope is continued to the terreplein of the rampart.

† In Vauban's first system this is 85° , in the modern system 90° .

it should not be less than 90° , and not exceed 110° ; that of 90° is the best.

32. A CAPITAL is an imaginary line bisecting the salient angle of any work. (*Pl. 4, Fig. 4.*)

33. THE CURTAIN is the line of rampart between, and connecting the flanks of two bastions.

34. THE GORGE is the space between the extremities of two flanks. (*Pl. 4, Fig. 3.*)

35. A FULL BASTION is one the terreplein of which is on a level with that of its rampart (A'). (*Pl. 3.*)

36. A HOLLOW OR EMPTY BASTION is one the terreplein of which is below that of its rampart (A). (*Pl. 3.*)

37. A CAVALIER is an elevated work constructed within a full bastion, with a command of fire over the work of the place. Its faces and flanks are parallel to those of the bastion, and it serves to protect the adjacent curtains from enfilade. It also forms an excellent retrenchment at the end of a siege when its bastion has fallen; and for these reasons, the faculty of constructing a cavalier within it, renders the full bastion far preferable to the hollow.

38. A TENAILLE is a low work in the main ditch constructed in front of the curtain; it is reveted with masonry all round. (*Def. 51.*)

39. A RAVELIN, or DEMI-LUNE, is a work placed beyond the main ditch opposite the curtain; it has two faces, and is separated from the covered-way by a ditch connected with the main ditch.

40. A CAPONNIERE is a passage across a ditch, covered on each side by a parapet, the superior slope of which terminates in a small glacis.

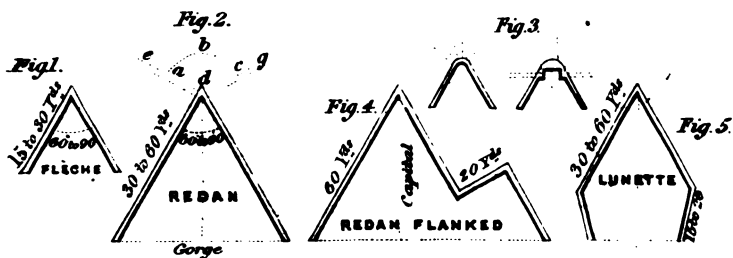
41. A CUNETTE is a drain in the middle of a dry ditch.

42. A BATARDEAU is a strong wall of masonry built across a ditch, to separate the part containing water from that which is intended to be kept dry.

43. THE COVERED-WAY is about 30 feet wide, measured from the counterscarp, and has a parapet about eight feet high provided with a banquette.

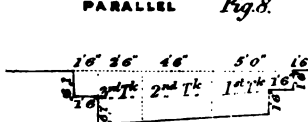
44. PLACES-OF-ARMS are spaces formed at the salient and re-entering angles of the covered-way; they are intended as flanks to it, and for the assembling of troops for its defence.

45. TRAVERSES are short parapets erected across the covered-way, and on the faces of works to afford protection from enfilade.



PARALLEL

Fig. 8.

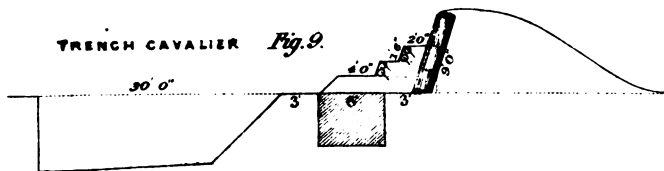


Per Man

Task	Long	Broad	Deep	Time
1 st	5.0'	5.0'	3.0'	2.28
2 nd	5.0'	4.0'	3.4'	2.38
3 rd	5.0'	3.3'	3.6'	3.10

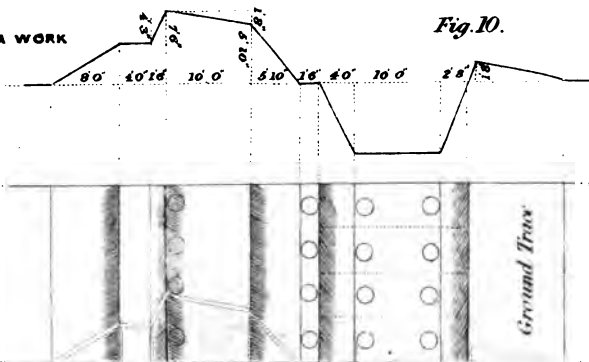
TRENCH CAVALIER

Fig. 9.



PROFILE OF A WORK

Fig. 10.



Design of Profile, formed
of Laiks and Richets.

○ Men at Work.

46. THE GLACIS is the gentle inclination given to the superior slope of the parapet of the covered way.

47. OUTWORKS are those which are beyond the enceinte.

48. A FLECHE is made of two equal lengths of parapet from 15 to 30 yards long, forming a salient angle of at least 60° , and should not exceed 90° . (*Pl. 4, Fig. 1.*) To calculate the length of parapet required deduct $\frac{1}{6}$ from the Guard, for a reserve, and allow *one yard* of parapet to each remaining file, half this gives the length of each side. When the side exceeds 30 yards, the work is called a "redan."

49. REDANS are large flèches, with sides of from 30 to 60 yards long; these and the above are usually constructed at the foot of the glacis at the places-of-arms; they are also used for the defence of out-posts, bridges, &c., &c. (*Pl. 4, Fig. 2.*) As the sector *a, b, c*, between the lines of fire, *de-dg*, is unprotected, it is advisable to *round* the parapet at the salient, or make it in crémaillères. Redans exceeding 60 yards should be flanked. (*Pl. 4, Fig. 3.*)

50. A LUNETTE is a redan, of which the sides are broken to form *outward* flanks 15 to 20 yards long. (*Pl. 4, Fig. 5.*)

51. TENAILLONS or TENAILLES (*Def. 38*) have two equal sides, forming a re-entering angle, thus furnishing a cross-fire; these and lunettes are usually constructed on each side of ravelins. (*Pl. 4, Fig. 6.*)

52. CREMAILLERES are a succession of tenailles, but with unequal faces (*Pl. 4, Fig. 7*), *i. e.* indented like the teeth of a saw.

53. A HORN WORK consists of *one* front, and a CROWN WORK of *two* fronts of fortification, connected with the *enceinte* by two long sides or wings, directed upon the faces of the bastions or ravelins which defend them.

54. A CITADEL is a fortress within or adjoining the works of a place, and commanding the town and country; it affords a refuge for the Garrison, and serves as a check upon the inhabitants.

55. A REDOUBT is a field fort, and may be either square, circular, or polygonal; a redoubt is sometimes constructed in a ravelin.

56. LINES are formed for the attack of places and the intrenchment of troops; they are composed of redans, &c., flanking each other, and connected by curtains not exceeding 120 yards in length.

57. A TRENCH is a small ditch along the rear of a parapet and serves to get men more rapidly under shelter.

58. **PARALLELS** are parapets with trenches, and are used at sieges to connect the several approaches. (*Pl. 4, Fig. 8.*)

59. **ZIG-ZAGS** and **BOUAUX** are trenches having parapets and berms, but no banquettes; they are used as covered communications from one parallel to another.

60. **AN ERAULEMENT** is an elevation of earth to protect troops from a flanking fire.

61. **TETES-DE-PONT** are works, &c., constructed at the head of a bridge to defend it.

62. A **REVELMENT** is the wall of masonry used in permanent fortification to support the sides of the ditches; in order to give it greater strength, buttresses are built in the bank at about 18 feet apart; these are called **Counter-forts**. *

63. **THE COPING-STONE, OR CORDON**, is a flat stone placed on the top of revetments to protect them from the weather.

SECTION II.—EMBRASURES AND REVETMENTS.

1. **EMBRASURES** are openings, 18 feet apart, cut in the parapet for guns to fire through; their exterior width measured on the "sole," at 12 feet from the "sill," is seven feet.

2. **THE NECK OF THE EMBRASURE** is the narrow or inward part; measured on the sill, it is two feet wide.

3. **THE SOLE** is the bottom, or space between the "cheeks" or sides. The cheeks are sloped at the neck $\frac{1}{2}$, and at the mouth of the embrasure $\frac{1}{4}$ their height.

4. **THE SILL** is the front of the sole, three feet high.

5. **THE GENOUILLERE** is the portion of the parapet directly beneath the embrasure.

6. **THE MERLON** is the portion of the parapet between two embrasures.

7. To prevent the guns from injuring the terreplein by their recoil, they are worked on "platforms" of wood or stone; and a beam of wood called a "hurter" is placed for the same purpose against the genouillère.

8. **BATTERIES-EN-BARBETTE**.—When guns are required to fire over the parapet, barbette batteries are erected by raising the terre-plein of the rampart to within three feet of the crest of the parapet. This gives the gun a range over everything before it, but the artillerymen become exposed from the thigh upwards. The guns are drawn on to the barbette by means of ramps constructed for the purpose.

* Revetments are traced in red, as are also brick buildings, &c.

9. **LOOP-HOLES** are oblong holes cut through timber, or masonry, for the fire of musketry.

10. **GABIONS** are cylindrical baskets, open at both ends, 3 feet high by 2 feet in diameter, made of brushwood, entwined round 12 pickets 3 feet 9 inches long, & *c.* projecting 9 inches beyond the wickerwork ($4\frac{1}{2}$ in. at each end); they are used to revet, or support steep *interior* slopes of batteries.

11. A **SAP-ROLLER** is formed of two gabions,—one 4 feet in diameter, the other 2 feet 8 inches, placed *inside* each other; and the space between them stuffed with pickets of hard wood, to render them musket-proof.

12. **HURDLES** are used to retain earth at a steep slope, and also to form a firm footing in the Trenches in wet weather.

13. **FASCINES** are bundles of strong brushwood about 18 feet long, and bound tightly together to about 9 inches in diameter to render them musket-proof.

14. **SAND BAGS** are made of coarse canvas, large enough to contain a bushel of earth; they are used for revetting the *interior* slopes of temporary field works.

15. **SODS OF GRASS** should be cut, when practicable, 18 inches by 12, and 6 inches thick; sods are much used in the construction of parapets.

SECTION III.—OBSTACLES.

There are two kinds of Obstacles—"Natural" and "Artificial:" the former are Rivers, Precipices, Marshes, &c., and are the best; the latter assist greatly in the defence of Works, and are as follows:—

1. "**CHEVAL-DE-FRISE**," which is made by inserting staves shod with iron, bars of iron, spikes, or even sword blades; *crosswise*, into thick beams of wood about 12 feet long; these beams are then chained together, and are called *Chevaux-de-Frise*.

2. **PALISADES** are strong stakes 9 feet long, fixed 3 feet in the ground, about 4 inches asunder; they are joined together on the inner side by bars of timber called "*lintels*."

3. **FRAISES** are a lighter kind of palisade, and are usually placed horizontally in the exterior slopes of ramparts; but they are objectionable, as a storming party can rest their scaling ladders against them, an instance of which actually took place in the Peninsula.

4. **ABATTIS** are formed of trees felled, and their branches pointed, the trunks being turned inwards.

5. **TROUS-DE-LOUP** are conical holes dug in the ground, about 6 feet deep, having a spiked picket fixed in the centre, with its point level with the surface.

6. **STOCKADES** are strong walls of timber, or palisades touching each other, and loop-holed.

7. **FARMERS' HARROWS** are often found most useful.

8. **CROWS'-FEET** are pieces of iron having four points; when scattered on the ground, one of the points of each sticks up; they are used to obstruct the advance of troops, more particularly cavalry.

9. **MINES.**

10. **FOUGASSES** are small mines formed at a depth of about 9 to 12 feet; they are placed at about 12 yards in front of the ditch, and fired by a train, or "*saucisson*," from the inside of the work. Shell Fougasses are on the same principle, consisting merely of one or more shells in a box, with their fuzes uppermost, buried under ground, and exploded as above.

11. Inundations are formed by damming up the course of a river or stream.

SECTION IV.—HOW TO PROJECT A FRONT OF FORTIFICATION ACCORDING TO VAUBAN'S FIRST SYSTEM.

(Pl. 3.)

1. Form the polygon of fortification as may be required, making each side, or front, equal to 360 yards. All the measurements for the construction of works are taken from the revetment, which is built first; its cordon forming the "magistral," or guiding line.

2. Bisect each front by the right radius, or line drawn from the centre of the polygon, which prolong.

3. From the point of intersection of the right radius and the front lay off on the former, and towards the centre, a perpendicular equal to $\frac{1}{3}$ the length of the front, if the figure be a square; $\frac{1}{4}$ if a pentagon; and $\frac{1}{5}$ for any other polygon.

4. From the extremities of each side (the angles of the polygon) draw the lines of defence through the inner extremity of the perpendicular.

5. From the angles of the polygon, and on the lines of defence, lay off $\frac{2}{3}$ of the front for the faces of the bastions; their extremities mark the shoulder angles.

6. From each angle of the polygon as a centre, with a radius extending to the furthest shoulder angle (B G, *see Plate*), describe arcs intersecting the lines of defence; chords to these arcs form the flanks of the bastion.

7. For the curtain draw a line joining the inner extremities of the flanks.

8. The embrasures on the flanks have their line of fire parallel to their lines of defence.

THE TENAILLE is 16 yards in thickness; its faces are formed on the lines of defence; its sides run parallel to the flanks of the bastions at 8 yards' distance, and its rear parallel to the curtain at 10 yards from it. (*Definition 38.*)

THE MAIN DITCH.—From the flanked angle of each bastion (*Definition 26*), with a radius of 30 yards for a dry ditch, and 36 yards for a wet one, describe an arc of a circle, and draw tangents to it from the shoulder angle of the bastion opposite to each side (*m m G, see Plate*), this forms the counterscarp; and where the lines intersect is the re-entering angle of the counterscarp.

THE CAPONNIERE has the crest of its parapet from $7\frac{1}{2}$ to 10 feet high, and drawn at 6 yards on each side of the perpendicular, and parallel to it; its banquette is 5 feet wide, having a palisade; its glacis is 20 yards; and the passage between the demi-gorges of the ravelin and the head of the caponnière is 9 feet.

THE RAVELIN.—From the re-entering angle of the counterscarp set off 100 yards on the prolongation of the right radius (*k, see Plate*), from this point to others on the faces of the bastions, at 10 yards from their shoulder angles, trace the faces of the Ravelin, their inner extremities resting on the counterscarp.

THE DITCH OF THE RAVELIN has its counterscarp 20 yards from, and parallel to, the escarp, and rounded at the salient; it runs into, and is of the same depth as, the main ditch, viz. 22 feet. The embrasures, on the faces of the bastions defending this ditch, have their line of fire parallel to its side.

THE REDOUBT IN THE RAVELIN has its faces parallel to those of the ravelin; its salient is 44 yards from the re-entering angle of the counterscarp; its flanks are 12 yards long, and parallel to its capital; its ditch is 10 yards wide and 11 feet deep.

The Barbettes, or Platforms, at the salients of bastions and ravelins, are at least 24 feet wide, having easy ramps.

The Terre-plein of the rampart of the enceinte is 24 feet;* in ravelins 18 feet, exclusive of banquettes, &c.—(*Definitions* 18, 19.)

THE COVERED-WAY is 10 yards wide, (*Definition* 43.) and follows the windings of the counterscarp.

PLACES-OF-ARMS.—Set off as demi-gorges on each side of the re-entering angles of the covered-way 30 yards, and form, with the tracing of the covered-way, salient angles of 100° .†

TRAVERSES are 18 feet thick, the inclination of their superior slope 3 feet; those at the salient places-of-arms are formed on the prolongation of the faces of bastions and ravelins; those at the re-entering places-of-arms are perpendicular to the counterscarp: there is a third traverse placed in the middle of each side of the covered-way in the front of the ravelins. Banquette 5 feet, palisaded.

The passage round the *outer end* of a traverse is 9 feet clear of all slopes; this end is supported by a field revetment, having a base $\frac{1}{2}$ its height; the inner end is supported by the revetment wall of the counterscarp, which is built up against it according with its profile; the base of the revetment at the traverses is $\frac{1}{3}$ of its entire height.

THE GLACIS has its foot 50 yards from the crest of the covered-way, and parallel to it.

SECTION V.—PROFILE OF VAUBAN'S FIRST SYSTEM.

(Pl. 4.)

The Command of the Enceinte is 22 feet above the country, 20 feet above the tenaille, 3 feet above the ravelin, and 14 feet above the crest of the glacis.

The Command of the Ravelin is 11 feet above the crest of the glacis, and the latter 8 feet above the country.

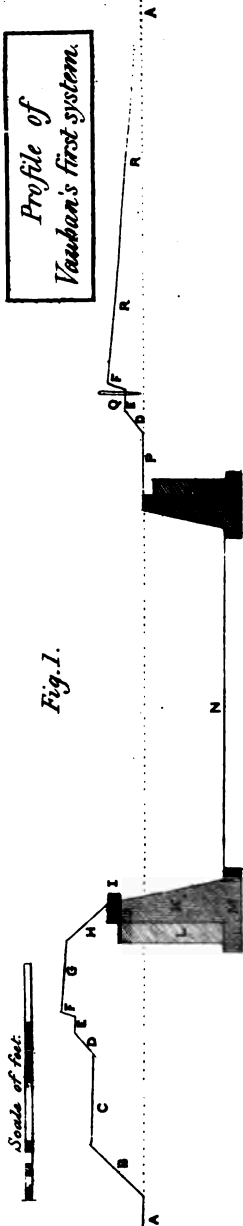
The Main Ditch and that of the Ravelin are 22 feet below the surface.

The Revetment of the Escarp of the Enceinte is 30 feet high, by 5 feet thick at the top, with counterforts at least 7 feet long (*Definition* 62); that of the tenaille is 15 feet high.

The Counterscarp Revetment is 21 feet high, by 4 feet at the top, with counterforts at least 4 feet long.

* 15 feet are usually allowed for the platforms for guns, and 25 for a passage in rear, making in all 40 feet.

Fig. 1.

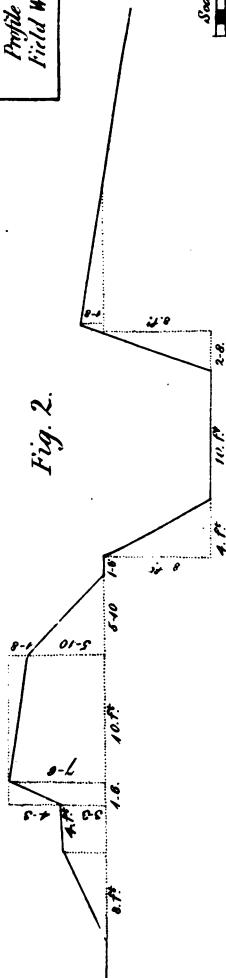


A. *Mane of Site.*
 B. *Slope of the Rampart.*
 C. *Terre-plain of do*
 D. *Slope of the Parapet.*
 E. *Tread of the Parapet.*
 F. *Interior Slope of the Parapet.*

G. Superior slope of the Parapet.
H. Exterior slope of d.
I. Coping stone or cordon of the Parapet.
K. Mortar of the Course.
L. Counterforts.
M. Foundation.

N. *Dry-Ditch.*
O. *Movement of the Counterscarp.*
P. *Covered-way.*
Q. *Palisade.*
RR. *Glacis.*

Fig. 2.



The Gorge Revetment of the Ravelin is 19 feet high, and that of the tenaille 16 feet; they are 4 feet thick at the top, with counterforts at least 4 feet long. All the revetments have a slope equal to $\frac{1}{2}$ of their height.

COMMUNICATIONS.—The usual means of communication between the enceinte, its outworks, and the country, are by Gateways, Drawbridges, Posterns, or Sallyports, Staircases, and Caponnières; the latter are also used to flank undefended ditches.

Gates and Bridges should be as few and as well defended as possible.

The Postern, or Sallyport, is a vaulted passage from 6 to 10 feet wide, and about 7 feet high: in a regular front of fortification it is built in the centre of the curtain, through the rampart into the main ditch, in rear of the tenaille; another postern leads through the thickness of the centre of the tenaille, into the caponnière across the ditch: at the gorge of the ravelin, there are staircases leading up to it, constructed in the masonry. There are also staircases at the re-entering places-of-arms, which are gained by proceeding through the passages on the right and left, between the head of the caponnière and the demi-gorges of the ravelin, and which lead to the covered-way.

SECTION VI.—DEFECTS OF VAUBAN'S FIRST SYSTEM.

Having thus given an account of Vauban's First System, which is justly considered his best, and on which the Citadels of Lille, Turin, and all his greatest works were constructed, we shall now proceed to notice briefly its defects, and the modification of it, which is known as the "Modern System," or the "System of the School of Metz," and which is generally the most approved of at the present time. The chief merit of this New System is attributable to Cernon-tagne, a celebrated French engineer of the last century.

Vauban was also the projector of two other Systems of Fortification, termed his "second" and "third" Systems; they were intended for improvements on the old round-towered fortresses of the middle ages, but as no works are now constructed upon these plans, it is needless to do more than allude to their existence.

The chief defects in Vauban's First System are—

1st. The flanks of the Bastions are not at right angles to

their opposite lines of defence, and are consequently liable to fire into each other, and the Bastions themselves are too small. In the "Modern System" the face of the Bastion is increased from $\frac{2}{3}$ to $\frac{1}{2}$ of the side of the Polygon (120 yards), and the flanks are made perpendicular to the lines of Defence.

2nd. The Ravelins and their Redoubts are too small, and the former do not sufficiently cover the "Shoulder Angles" of the Bastion. In the "Modern System" this great defect is remedied by taking off 34 yards from the "Shoulder Angles" of the Bastions *along the faces*, and with the distance between these two points *as a base* describing an equilateral triangle; the apex of this triangle forms the salient of the ravelin *on the prolongation of the perpendicular of the polygon*; and the two adjacent sides, as far as their point of intersection with the Counterscarp of the Main ditch, become its faces.

The faces of the "Redoubt of the Ravelin" are drawn parallel to those of the Ravelin at 31 yards' distance, and its ditch is 10 yards wide round its flanked angle. The fire of the *flanks* of the redoubt defends the *salients* of the collateral Bastions.

3rd. The reentrant Places-of-Arms are too small to admit of the construction of a strong redoubt for the defence of the covered-way.

In the Modern System the demi-gorges of reentrant Places of-Arms are made 56 yards from the reentrant angles of the Counterscarp, and the crest of the parapet is described in the segment of a circle, with this distance as a radius. The redoubt is revetted with masonry, and covered by a ditch.

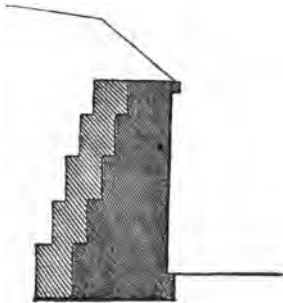
4th. The Ditch being of one uniform depth, the communications of the besieger are greatly facilitated, when once he has established himself in it, and the revetment of the body of the place opposite the ditches of the ravelin and its redoubt is exposed to the base.

Cormontagne remedied this by making the main ditch 24 feet, the ditch of the ravelin 18 feet, that of its redoubt 6 feet, and the ditch of the redoubt at the reentrant Places-of-Arms 10 feet below the plane of site; and by constructing demi-caponnières, with parapet and glacis facing the country, in the ditches of the enceinte and ravelin, should the ditches be dry (A A). (*See Woodcut, No. 2.*)

5th. Vauban made his Revetments sloping in front. *Pl. 3, Fig. 1.*)

In the Modern System the Revetments are "perpendicu-

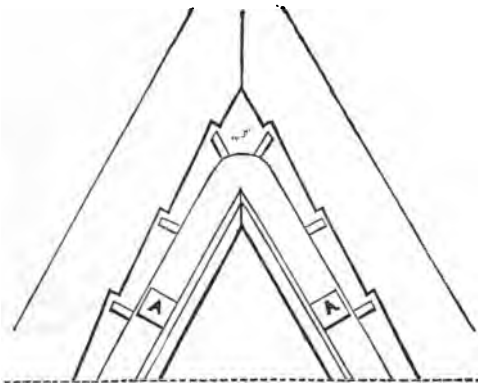
lar" in front, and "counter-sloping" in rear; they are thus rendered stronger, and less liable to injury from the weather: in order to resist the continual pressure of the earth, the back of the revetment is broken into steps.



No. 1.

Countersloping Revetment and Counterfort.

6th. The tracing of the "Crest of the Parapet of the Glacis" is very defective, inasmuch as the double crotchet passages round the "Traverses" (*see Plate 3*) fire into one another. To obviate this, Cormontagne substituted passages "en crémaillère" (*Definition 51*), the heads of the Passages being made at right angles to the line of Parapet in their front, thus :—



No. 2.

Salient of Ravelin, &c., with Demi Caponnières in the Ditch, and Crest of Glacis en Crémaillère.

SECTION VII.—GENERAL RULES.

1. A Salient Angle ~~should~~ never be less than 60° .
2. As Salients are the most exposed points, they should be directed, when practicable, towards some natural obstacle; if not, they must be artificially defended.
3. In tracing a Field-work, let there be as many flank defences as possible.
4. The Angles of Defence ~~should~~ never be less than 90° , and, if possible, not more.
5. Avoid the second flank defence as much as possible.
6. Never allow any Cover in the vicinity of a work; and command, if possible, a view of the country on all sides.
7. Dead Angles are to be avoided.
8. A Fortification should be proportioned to the number of men who are to defend it; and the length of the parapet remaining the same, as much space as possible should be inclosed within it.
9. Before commencing a Work, ascertain that you have sufficient means for its completion.

PART V.

SECTION I.—THE ATTACK.

1. THE first consideration in undertaking a Siege is, to secure magazines from whence the supplies may conveniently be drawn; they should, if possible, be established in towns or villages contiguous to the attack, and be accessible by water or by good roads. The troops having been formed into besieging and investing corps, and the required stores secured, the next operation of the Siege is—

2. THE INVESTMENT; the object of which is—

1st. To intercept all communications, succours, or supplies, and all persons likely to convey intelligence to the Garrison.

2nd. To carry away or destroy everything that could prove useful to the Defence, and of which the Garrison might avail itself.

3rd. To drive back into the Garrison, or make prisoners of, all detachments belonging to it that may be found outside.

The Infantry of the Investing Corps should, facing outwards, occupy the villages, hollow roads, hedges, borders of streams and ditches, and such other "posts" as would effectually oppose the entrance of "relief" into the Place; as this is usually attempted at night, the chain of "posts" should then be greatly strengthened. The Cavalry is employed to scour the country in every direction.

3. A RECONNOISSANCE is now made for the purpose of selecting the "point of attack," after which the *site* for the Park of Artillery and the places for collecting the material for conducting the Siege are decided upon. In selecting the "point of attack" everything connected with the Place, its situation, defences, batteries, obstacles, &c., &c., must be most carefully considered, and the strength of the Garrison ascertained.

4. THE BESIEGING ARMY takes up its quarters all round the Place, and at about 2000 yards from it so as to be out of range of large cannon. The Park of Artillery is now put in order, and the tools, gabions, fascines, saucissons, pickets,

&c., &c. required for all the works of the Attack are deposited in convenient places.

5. **FIRST PARALLEL.**—Everything being ready, the 1st Parallel is constructed, embracing the prolongations of all the works of the place which bear against the attack; it should be commenced about sun-set, at, usually, 600 yards from the Covertway (more or less according to circumstances). (*Pl. 4, Fig. 8*).

The Boyaux of communication between this parallel and the dépôts are also made this night. On the following morning the Troops who guarded* these works during the night, get under cover of the parallel, which is completed by "the day-working parties," who relieve the "night" ones.

Upon this Parallel is determined the prolongations of the works against which it is necessary to establish the "ricochet" batteries.

6. **BATTERIES.**—The Ricochet and Enfilading Batteries are now constructed, and at the same time the "boyaux" in front of the first parallel are pushed forward upon the prolongations of the "capitals" of the enemy's works. All the batteries should be unmasked and opened at the same time; and in order to fire with the same effect by night as by day, the exact charge and elevation for each gun should be ascertained.

7. **SECOND PARALLEL.**—The Boyaux having been carried on to within 300 yards of the Covert-way (that is, halfway between it and the *first* Parallel), the *second Parallel* is established by the "flying sap," if possible; sites for ricochet and enfilading batteries are traced upon this parallel, and are generally placed in *front* of it. Zig-zags are now pushed forward to within 150 yards of the covert-way, and here "*demi-parallels*," or places-of-arms, from 100 to 150 yards in length, are formed by flying sap, and are traced parallel to the place, extending to the *right* and *left* of each capital, sufficiently to meet at their extremities the prolongations of the sides of the covert-way, which form the "salients" approached. The object of these *demi-parallels* is to keep down the musketry fire of the salients, and of the long branches (or sides) of the covert-way, by establishing on their prolongations Howitzer batteries, which plunge their fire *into* the covert-way, destroying palisades, &c., &c.

* The Guards of the trenches should be—Infantry, $\frac{2}{3}$ of the strength of the garrison, and Cavalry $\frac{1}{2}$ more than that of the enemy.

8. **THIRD PARALLEL.**—Arrived at about 60 yards from the “salients” of the covert-way, *i. e.* at the foot of the Glacis, the *third Parallel* must be established (by the “flying sap,” where possible, but by “single sap” is safer and more prudent); its crest should be at least eight feet lower than that of the covert-way, so as not to mask the batteries in rear.

The advantages of the third parallel are—1st. It affords places for batteries against such parts of the Works as could not be sufficiently injured by those in their rear. 2nd. The re-entering places-of-arms, hitherto sheltered by their position from the effects of ricochet, can now be fired into from these new batteries. 3rd. It prevents “sorties” being made from any part of the covert-way of the fronts attacked.

9. **CAVALIERS OF TRENCHES.**—In order to drive the Besieged from the “salients” of their covert-way, these Cavaliers are constructed at 30 yards from its crest, and about 4 feet command over it. The number of tiers of gabions, which form one of these Cavaliers, depends on circumstances. (*See Pl. 4, Fig. 9.*) This Trench Cavalier was 36 feet in length, and was constructed by 1 non-commissioned Officer and 15 men, in $13\frac{3}{4}$ hours. The first row of gabions was taken up by “flying sap,” 10 men planting the gabions and filling them, the other five commencing a trench 12 feet in the rear, and throwing the earth to the men in the first trench in order to enable them to fill their gabions with greater celerity, and which they effected in five minutes. Proceeding by the “double sap” from the cavaliers, upon the capitals, the Besiegers approach at the rate of 10 feet per hour, with comparatively little danger.

10. **THE CROWNING OF THE COVERT-WAY** is the next operation; it consists in making a lodgment along the *crest* of the covert-way, and forming the “breaching” and “counter” batteries.

11. **DESCENT OF THE DITCHES.**—While the above are being constructed and opened, the Descents are carried on; they are formed on either side of the crowning of the covert-way, close to the first traverse of the crowning, and opposite the first traverse of the covert-way.

12. **PASSAGE OF THE DITCH.**—When the Breach is nearly practicable, and when the counter batteries have subdued the fire from the *flanks*, the passage of the ditch is commenced. In order to protect this operation, the “gallery” of the

counterscarp is "crenelled;" if there is no gallery one must be made, 20 yards in length, to the right and left of the opening of the Descent: a brisk fire must now be kept up from the crowning of the covert-way.

If a DRY DITCH, the passage across it is effected by means of a Trench, made by sap, extending from the opening of the gallery to the foot of the breach.

If a WET DITCH, form a causeway by sinking fascines with stones, and making a parapet of fascines, which are passed down from hand to hand by the men in the gallery. If the water flows through the ditch, the causeway must be more solid, and have openings in it, or a "floating bridge" must be provided.

13. THE ASSAULT OF THE BREACH.—Daylight is considered the fittest time for this. A heavy fire must be directed against the *summit* of the Breach and the neighbouring defences, in order to compel the Garrison to retire; the "storming party" now charge up the Breach, followed by the "working party" provided with gabions, who, by flying sap, trace the lodgment into which the "storming party" retire as soon as a sufficient covering has been obtained.

SECTION II.—ESCALADING.

1. The ladders provided for Escalading are in "joints," which fit into one another, so that each joint of 11 feet 3 inches will give an effective length of 10 feet. Three of these joints form an "entire ladder," weighing about 150 lbs.

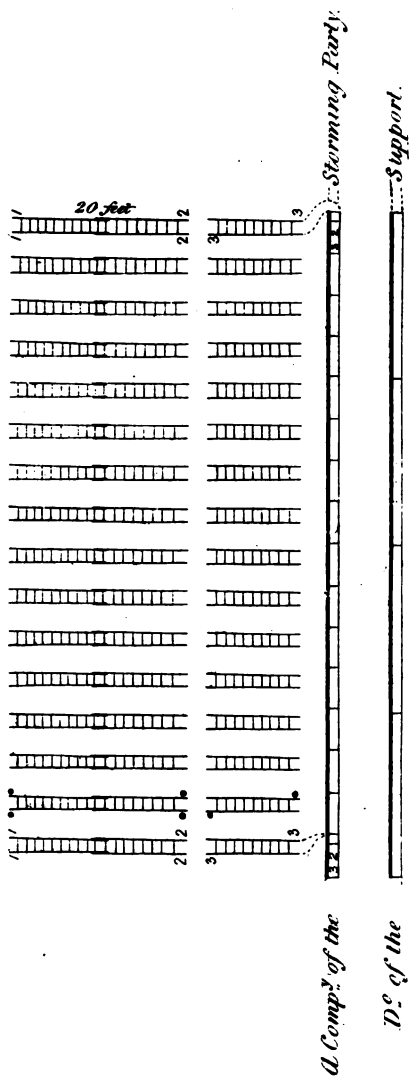
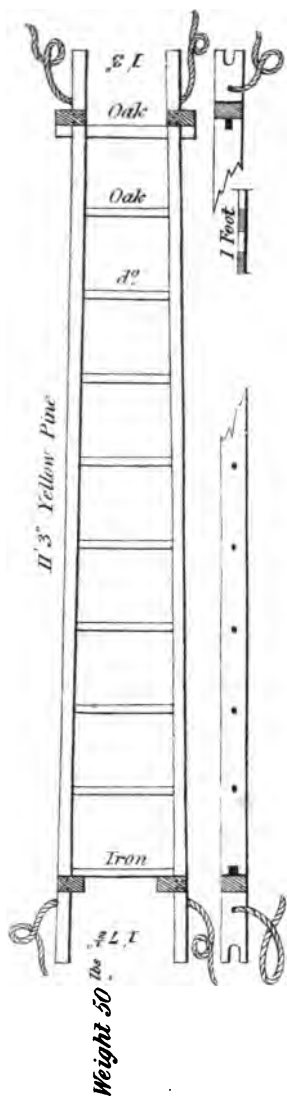
2. As works are usually more than 10 feet high, it is always advisable to have two joints fixed and lashed together before proceeding to the "assault;" the use of the lashing is, to prevent their separating on being lowered into the ditch.

3. A Ladder placed against an escarp should project about 3 feet above it, in order to ensure a safe landing.

4. Ladders should not be placed in too upright a position for fear of their being topped over by the enemy; on the other hand, too great a slant would render them liable to break down: a slope of about 15° from the perpendicular will be found sufficient, *i. e.* about $\frac{1}{3}$ of the length of the ladder.

THE ESCALADE.—Supposing the ladders to be arranged on

Escalading Ladders.



the ground at two paces apart, their *broad ends* to the front, two joints being lashed together, and the third one placed in their rear (*Pl. 6*), the different Corps are told off,—some for “real” attacks others for “feigned” ones; parties of each being provided with Powder-bags containing from 10 to 50 lbs. each, Fuzes and Gimlets, and also with Crowbars and other implements useful in removing obstacles. An “attacking party” should be told off,—one-half, as a “covering party” and “support,” to be extended “*ventre à terre*” along the crest of the glacis to keep down the enemy’s fire, and rush to the “support the instant required to do so; the other half, or “storming party,” should be told off into *sections of threes*,* one to each “entire ladder,” the right hand files being provided with Saphooks and the means for “spiking” guns; then—

“*Sling arms.*”

“*Right face.*”

“*To your respective ladders.*”

“*Threes, left wheel.*”

“*Quick march.*”

The front rank disengages to the *left*, and the rear rank to the *right*, of the ladder; the rear rank man of No. 3 halts on the right of the narrow (the *rear end*) of the single joint; his front rank man on the left of the broad end; No. 2 file halts at the narrow end of the double joints; and No. 1 file at the broad or *front end* of the ladder. (*Pl. 6.*)

“*Take up ladders.*”

“*Forward.*”

Where there is a Counterscarp, a greater number of ladders will be required; and *one-third* of them should be left at the counterscarp after the assaulting party has descended into the ditch to enable the support to get down, and also to secure a retreat. All the other ladders must be carried broad ends forward to the Escarp, and elevated by placing the ends firmly on the ground at about a *pace and a half* from the wall, the front file facing about to assist the other men. When a ladder requires lengthening, it can be done by raising and drawing the foot of it further from the wall, and adding the other joint.

* By this means all the confusion and loss of time attendant on forming a “double column of sub-divisions” and *extending* it, and consequently placing men of different companies at the same ladder, would be obviated; and it would also ensure each Company being kept together, a most *essential* point, and one which should *never* be lost sight of.

When the proper slant has been given to the ladders,

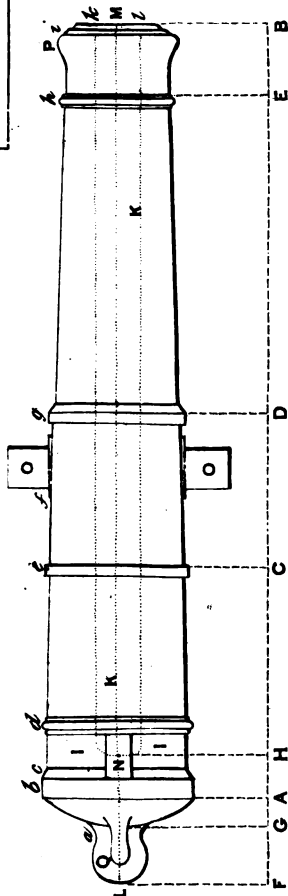
“*Fix bayonets.*”

“*Assault.*”

The No. 1 files (having the saphooks) mount the ladders first: as the other men come up in succession, they “front form,” all “feeling in” towards the centre of the Company as much as circumstances will admit of, availing themselves of every “cover.”

The principal duty of Officers on these occasions is, to direct their Men *steadily* and *silently*, bearing in mind that their chief object is, to *surprise* the enemy and *clear the way* for the supports.

Iron 18 Pdr



- AB. Length of the Gun.
AC. First Reinforce.
CD. Second Reinforce.
DE. Chase.
EB. Muzzle.
AF. Canals.
GH. Breech.
I. Vent fold.
KK. Base.

- LM. Axis of the Gun.
N. Vent.
O. Trunnions.
P. Swell of the Muzzle.
Q. Button.
a. Neck.
b. Base Ring.
c. Base Ring Cap.
d. Vent fold, Arregal & Filler.

- o. First Reinforce Ring.
f. Trunnion Shoulder.
g. 2nd Reinforce Ring & Cap.
h. Muzzle Arregal & Filler.
v. Muzzle Mountings.
dz. Diameter of Base Calibre.

PART VI.

GARRISON GUNNERY.

(Pl. 7.)

SECTION I.—DEFINITIONS.

1. THE CALIBRE of a Gun is the size of the diameter of its bore.

2. THE SIGHTS are two "notches," one on the upper part of the base-ring, the other on the upper part of the swell of the muzzle.-

3. THE LINE OF METAL is that which is supposed to connect the above-mentioned notches.

4. THE TANGENT SCALE is used to give the necessary elevation to a gun; it is divided into degrees and parts, and, when required, it can be affixed to the gun by means of the groove and screw at the breech; it has a sight at the top, which is used instead of the one on the base-ring.

5. THE LINE OF SIGHT is the aim, or the direct line from the eye along the sights, to the object aimed at.

6. THE LINE OF FIRE, or OF PROJECTION, is the line in prolongation of the "axis of the bore," and is the direction the projectile would take, were it not acted upon by gravity and by the atmosphere.

7. THE LINE OF TRANSIT, or TRAJECTORY, is the course taken by the projectile, acted upon by the opposing influences, and forms a *curve* from the muzzle to the object.

In firing, these three lines must be in the same vertical plane. "The Line of Fire" and the "Trajectory" are naturally always so; *but* to ensure their being in the same vertical plane with the "line of sight," it is of the utmost importance that the sights be kept perfectly upright.

8. THE DISPART OF A GUN is the difference between *half* its diameter at the base-ring and at the swell of the muzzle; to aim "Point-Blank," it is necessary to fix on the muzzle a substance equal to the Dispart, which will render the "line of sight" parallel to the *axis of the bore*.

9. THE ANGLE OF DISPART is the number of degrees the axis of the bore would point *above* the object aimed at, the aim being taken along the line of metal, which in this case is called the "line of metal elevation."

10. **POINTING AND LAYING** include both the elevation and direction given to the gun.

11. **THE POINT-BLANK RANGE** is when the gun is pointed *direct* at the object aimed at, and is measured from the muzzle of the gun to the first graze of the shot. (*Def. 4.*)

A shot during its transit falls 16 feet in the course of a second, 144 feet in three seconds, and so on; consequently, if the time of flight be three seconds, the gun should be pointed 144 feet above the object.

The Point-Blank range of 32, 24, 18, and 12-pounders, with solid shot, varies from 380 to 260 yards; beyond this, an elevation of $\frac{1}{4}$ of a degree will be required for every 100 yards up to 1200 yards; beyond which, $\frac{1}{4}$ of a degree for every 50 yards up to 1500 yards, which is considered the extreme effective range. Some authors consider 1200 yards "random practice."

In Brass Ordnance, 12, 9, and 6-pounders, the point-blank range is 300 yards; each $\frac{1}{4}$ of a degree increases their range 100 yards up to 700 yards; from which, to 1000 yards, each $\frac{1}{4}^{\circ}$ gives 75 yards: and, from 1000 yards to 1200 yards, each $\frac{1}{4}^{\circ}$ gives an increase of 50 yards: their greatest range is 2200 yards.

12. **ELEVATING a Gun** is raising its muzzle.

13. **DEPRESSING a Gun** is the reverse.

14. **BOUGHING a Gun** is fixing a copper vent into it.

15. **TERTIATING a Gun** is ascertaining that all its proportions are correct.

16. **QUADRATING a Gun** is ascertaining that it is properly placed on its carriage.

17. A GUN IS **HONEYCOMBED** when the surface of its bore has holes in it.

18. To **SPIKE a Gun** is to render it unserviceable, by hammering a spike or nail, or even a spike of wood, into the Vent, and breaking it off close to the surface. A gun may also be rendered useless by breaking off one of the Trunnions, by letting a heavy shot fall on it three or four times.

19. A Gun may be **Unspiked**, and rendered serviceable, by loading and loosely *double* shotting it, having previously laid a quick match with a small piece of slow match projecting from the muzzle for firing it with.

20. **WINDAGE** is the difference between the diameter of the bore and that of the ball; the less the windage, the greater the velocity and range.

21. **CARBONADES** are short pieces of ordnance, having a

loop under the reinforce instead of trunnions; they are made with a chamber, have the muzzle scooped, (forming a "cup,") and have a "patch" on the reinforce; they weigh much less than guns of the same calibre, and are principally used in the Navy. (See Table.)

22. **HOWITZERS** are either of brass or iron, and are used for projecting shells; they are lighter, and, being shorter, are more easily loaded than guns of the same calibre; they are sometimes used as mortars. (See Table.)

23. **MORTARS** are used for throwing shells into a town or fort, blowing up magazines, breaking through roofs, &c.; they are distinguished from each other by the diameter of their bore; they have chambers, in which the powder is concentrated; and the shell, which fits closely to the sides of the piece, receives the full force of the charge when fired.

24. **THE SERVICE CHARGE** of powder is, for heavy guns, $\frac{1}{3}$ the weight of the shot; and, for light ones, $\frac{1}{4}$. This, according to the best authorities, is far too great a proportion; for with the present windage, a charge of $\frac{1}{6}$, or at most $\frac{1}{3}$ of the shot's weight, is considered sufficient for ordinary purposes, and $\frac{1}{3}$ when required for "battering."

25. **PRICE OF GUNS**: brass guns cost 18*l.* a ton, and iron ones from 20*l.* to 26*l.* a ton.

26. **RECOIL** is the sliding back of a gun on its being fired.

27. **RICOCHET** is the bound and rebound of a ball. In the ricochet of a fortification (which is causing a shot to strike it in several places as it bounds along), the elevation of the gun must not exceed 10°; against Infantry in the field, 3°.

SECTION II.—ARTICLES REQUIRED FOR THE SERVICE OF A GUN.

1. A Sponge, and a Wad-hook (for unloading), which are placed resting against the merlon to the right of the gun, or on the ground when there is no parapet.

2. Five Handspikes, two on each side of the gun laid on the platform, near the edge, with their points towards the parapet, the front ones about 2 feet from the hurter, and the rear ones inside, and overlapping them to about the middle; the fifth is placed in rear of the gun, small end to the right.

3. A Linstock, which is the staff to which the slow match is attached; it is usually stuck in the ground outside No. 5.

4. A Port-fire, which is used by No. 5 for firing, when the gun is not provided with a lock.

5. A Powder-horn, and Wire or Pricker; when "tubes" are used the former is not required; No. 4 has the box containing them strapped on his right side, and has also a "Thumb-stall" on his left thumb "for serving the vent."

6. A wooden Cylinder or a leather Cartouch, for No. 6 to carry the charge in.

7. A Water-bucket, a Broom, and a Shovel.

8. Shot piled to the left of the gun. Wads close to the shot.

9. Charges of Powder, contained in flannel bags, marked on one side with a broad arrow, and tied at the end.

SECTION III.—GARRISON GUN EXERCISE.

The Detachment, consisting of a non-commissioned Officer and five men, is halted in rear of the gun and told off:—the non-commissioned Officer, No. 1; the right hand man of the rear rank, No. 2; his front rank man, No. 3; and so on. No. 1 is the left-hand man of the rear rank, and commands—

"Right face."


"Take post."


"Left wheel."


"Quick march."

Nos. 2, 4, and 1, on the Right of the Gun.

Nos. 3, 5, and 6, on the Left of the Gun.

Nos. 3,  2, in line with the Muzzle Astragal.

Nos. 5,  4, " " Trunnions.

Nos. 6,  1, " " Vent.

"Take post under cover of the Merlons."

All make a half-face outwards, except Nos. 2 and 3.

"Quick march,"

"feeling in" to Nos. 2 and 3, and halt.

"Inwards about face."

This is the position the men should invariably be in when not actually employed at their several Duties: when at the gun they must not cover each other, but stand in echelon.

"Run the Gun back." (If required.)

The Men (2, 3, 4, 5), bring their outward shoulders for-

ward, "halt" facing the gun, seize their handspikes by the middle with the hand nearest the parapet, fingers down, and the small end with the other hand, fingers up; then turn the wrist and slip the hand, which has hold of the middle, up to the small end, and with the other hand seize the middle; the points thus thrown to the rear must then be placed, bevel upwards, before and under each of the axletree arms, the men at the same time separating their feet by taking a side step towards the parapet.

"*Heave.*"

Inclining the body towards the breech, make the carriage move to the rear until sufficient room is made for loading. No. 2 directs the motions.

"*Halt.*"

Handspikes are placed noiselessly on the ground as before. Men take cover under the Merlons.

"*Load.*"

DUTIES OF EACH NUMBER.

DUTIES OF No. 1.

No. 1 gives all words of command, and superintends the working of the gun. He "lays" the gun (*Def. 7*), and when it is being "run up" he directs it with his handspike into the line of fire; when the gun is fired he places himself to windward, in order to watch the effects of his shot. (See "*Run the Gun up*," "*Traverse*," "*Elevate*.")

DUTIES OF No. 2,

AT THE WORD "*Load.*"

1st. He faces to his left, seizes the sponge, right hand at the middle of the stave, left hand 18 inches higher up, holds it perpendicularly, faces right about $\frac{3}{4}$ and marches up to the gun, placing himself opposite the muzzle mouldings.

2nd. He carries his right foot 30 inches to his right, right knee well bent, left leg braced, body leaning towards the parapet, at the same time sliding his left hand up to the sponge-head, which he brings down and places against the side of the muzzle; right hand at the middle of the stave fingers downwards, left hand at the sponge-head fingers up, the stave held parallel to the gun. (When using the rammer end, the fingers of the right hand should be up and those of the left down.)

To SPONGE.—1st. Enter the Sponge-head about six inches into the bore, move the left hand up to the right one, and force the sponge into the piece until the left hand touches it.

2nd. Slip both hands along the stave towards the rammer end, inclining the body towards the parapet, and ram the sponge home, body towards the carriage.

3rd. Sink down bending both knees, take a firm hold of the stave, lowering the right hand and bringing the left well round the top of the stave, press the sponge well home (in order to extinguish any fire that might remain), and give it two full turns *outwardly*, gradually straightening the body each time.

4th. Draw the Sponge by "giving and taking," that is, drawing it about two feet and returning it *one* foot, screwing it all the time in order to clean the bore; when the sponge-head reaches the muzzle jerk it out, to brush away the dirt; the right hand at the middle of the stave, and the left near the sponge-head.

5th. Brace both knees, raise the rammer-head, and give the sponge two taps against the *under* part of the muzzle (to knock out any fire that might be in the sponge), and, closing the right foot to the left one, hold the stave parallel to the gun (this must also be done after the word "*Cease firing*").

TO TURN THE SPONGE.—Take a side step to the left (in order to obtain more room), give the sponge-head a *cant* upwards, turning the right wrist and separating the feet; seize the stave, when it comes round, with the left hand (*fingers down*), slipping it up to the rammer-head, which place against the side of the muzzle (*see* Duties of Nos. 3 and 6). No. 6 here hands the charge to No. 3, who puts it into the gun "broad arrow" *upwards* and "tied end" to the *front*: it is rammed home by No. 2 with all his strength. No. 6 next hands a Shot and a Wad to No. 3, who places them (the shot first) in the piece. No. 2 presses them home *twice*, he then draws out the stave about two feet, separating his hands about 6 inches to make room for No. 3, who assists him to give the whole charge two violent rams home; in doing so they must incline their bodies well to the rear, their *outward* arms straight and their *inner* arms thrown out over the gun at each ram, hands pointing towards the vent, palms down; they must also bend their knees alternately according to the working of the rammer.

After ramming home, No. 2 "springs his sponge," that is, jerks it out, braces both knees, and places the rammer-head, again, at the quarterwight; he then steps back to his place at the merlon in three motions.

1st. Bring the right foot up to the left and raise the sponge perpendicular, left hand uppermost.

2nd. He faces to the *right about three quarters*, marches up to the parapet, lays the Sponge against it.

3rd. Right about three quarters face, again.

No. 2 now holds himself in readiness to "*Run the gun up*" and "*Elevate*."

For 24-pounder gun and upwards, single-headed staves are used, and, instead of turning the sponge, No. 2 places it against the parapet, as already shown; he then takes the rammer in the same way as he took the sponge, and after holding it horizontally, the end touching the muzzle, he *cants* it up lightly, and in catching it reverses the position of his hands ready for "*ramming home*;" after using the rammer, he shifts his hands again and replaces it, as he did the sponge against the parapet.

DUTIES OF No. 3.

No. 3 always loads and sometimes supplies himself with ammunition; when shell or spherical case is used he uncaps the fuse.

At the word "*Load*."

1st. He steps forward, still covered by the merlon, placing himself in line with the muzzle, faces to his right, places his right foot ready for facing about, and looks over his right shoulder to observe No. 2.

2nd. As soon as No. 2 has sponged, No. 3 holds out both hands, (palms open and touching elbows close), and receives the cartridge from No. 6, the bottom of it in his right hand and the "*choke*" in his left.

3rd. Right about *face*; he goes up to the gun, puts in the charge so that the *side seam* of the bag may be clear of the vent.

4th. Left about face to receive the shot and wad from No. 6.

5th. Right about face, again, he puts in the shot and the wad after it; as soon as these are pressed home by No. 2, No. 3 takes a side step to his left and places himself in position to "ram home," his *left* hand between the hands of No. 2 and his *right* hand next the muzzle; he must observe the same precautions as No. 2, but throwing his right arm out over the gun instead of the left: after giving the two rams he faces to his *left*, marches to the merlon, and faces right about ready to "*Run the gun up*," "*Elevate*," or "*Traverse*."

DUTIES OF No. 4.

1st. At the word "*Load*" No. 4 steps up to the gun, and, bringing his *left* shoulder forward, he halts facing the "*vent*."

2nd. He brushes the vent with the thick part of his left thumb, throwing the hand towards the "*cascable*," and faces to his right.

3rd. He places his left thumb (the "*thumbstall*" being on it) on the vent, closing it air tight, fingers spread out and resting on the other side of the gun, arm at full length, body erect; this is termed "*serving the vent*," and must also be done at the word "*cease firing*." When the gun has a lock, No. 4 half cocks it with his right hand, and after wiping it he resumes his place at the merlon, ready to "*Run the gun up*," "*Elevate*," or "*Traverse*."

The life of No. 2 often depends on the vent being well closed while he is loading.

"*Prime*."

At this command No. 4 takes a "tube" from his box, places it between the thumb and fore-finger of his *right* hand, uncaps it with his *left* hand, takes the "*pricker*" and steps up to the gun. He then "*pricks the vent*" by running the wire into it and through the flannel containing the charge; which done, he drops the tube into the vent and returns to his place, facing *left about*. Should it rain, he holds his hand out over the tube to keep it dry until the word "*fire*."

If the gun has a lock he takes the powder horn along with him, and, after fixing the tube, he primes the pan (holding the bottom of the horn towards the muzzle); after which, he shuts the pan, cocks with his right hand, and returns to his place.

When there are no tubes, after pricking the Vent, he fills it with powder from the horn, leaving some on the "*vent field*" in front of the vent; this he bruises with the horn, holding it with both hands across the vent, the right hand at the thick end, and furthest from him; should it rain, he places the "*apron*" over the priming until the word "*fire*," when he removes it, and lays it on the gun in front of the vent.

DUTIES OF No. 5.

No. 5 remains under cover of the merlon until required to "*Run the gun back*" or "*up*," "*Elevate*" or "*Traverse*."

1st. At the word "*Prime*" he takes the "*portfire*" in his right hand (*fingers down*), lights it, steps up, and places himself in line with the vent, and stands at "*attention*," (clear of the axletree) facing the parapet; portfire held down slanting towards the carriage.

2nd. At the command "*Fire*" he raises his arm, elbow bent (sufficiently to allow the wheel of a travelling carriage to recoil under it), brings the port fire slowly up to the front of the cup of the tube, and fires it. After firing, he cuts off the lighted end of the portfire, and returns to his place.

If the gun has a lock, he steps up to it, takes the "Lanyard" off the "Button," holds the end in his right hand, steps to one side to be clear of the recoil, and at the word "Fire" tightens it with a jerk. After firing he replaces the lanyard, and goes back to the merlon.

In firing with a slow match, at the word "Prime," No. 5 takes the "lintstock," fixes the match (which should hang about four inches); he steps up as before, the lintstock carried horizontally: at the word "Fire" he raises it in the same position until the middle touches his hip, he inclines the match to his left, knocks off the ash with his left fingers, and fires the front of the priming left on the vent field by No. 4. After this he replaces the lintstock, and returns to the merlon.

DUTIES OF No. 6.

1st. At the word "Load," No. 6 goes to the magazine, receives a cartridge, and places it in the wooden "cylinder" (choke upwards); or if he has the leathern "cartouche" slung over his left shoulder, he lays it in it (choke to the right), and shuts it.

2nd. He steps up to the side of the platform in line with the rear of it and facing the parapet; he places the cylinder on the ground and stands at "attention."

3rd. At the word "Load," he takes the cylinder up to No. 3, and halts facing him, and puts it down. When No. 2 is drawing the sponge, he opens the cartouche or the cylinder, and takes hold of the cartridge by the choke with his right hand.

4th. When No. 2 has done sponging, No. 6 takes out the cartridge, and supporting the other end with his left hand, he places it horizontally in the hands of No. 3. (*See Duties of No. 3.*)

5th. He places the cylinder on the ground to his right, faces the parapet and goes for a "shot" (and a "wad," if required), which he hands to No. 3; he then goes for another cartridge, and so on—unless required to "*Double man the handspikes*," when he assists No. 3 as No. 1 does No. 2; but with a "travelling carriage," No. 6 assists No. 5, and No. 1 No. 4.

The Gun being loaded, No. 1 commands.

"Run the Gun up."

Nos. 2, 3, 4, and 5, go up as in "running the gun back," but place their handspikes (bevel up) behind and under the axle-tree arms, "heave," moving the gun up to the embrasure, No. 1 guiding it with his handspike (*see Duties of No. 1*), with a travelling carriage (which has two large wheels and a trail), 2 and 3 place their handspikes between the spokes of the fore-part of the wheel close to the fillie; 4 and 5 facing the parapet, place theirs under the hind part of the tire of the wheels, No. 1 guides the trail, and all "heave" together. Running the gun back is the reverse, 2 and 3 act as 4 and 5, and *vice versa*.

"Halt."

No. 1 turning the point of his handspike to the rear, lays the handle resting between the "stool bed" and the "right cheek" of the carriage, the other men incline outwards to the rear, until off the platform, and stand in echelon protected by

the merlon, 2 and 3 in line with the "breech," 4 and 5 in line with the rear of the carriage, but two side paces further from it; handspikes held diagonally across the body, points on the ground and towards the gun; *outer* hands at the ends (fingers uppermost), and *inner* hands well down the handle (fingers under), ready to "*Traverse*" or "*Elevate*." No. 1 takes hold of the "quoin," and looks along the quarter sight.

TRAVERSE.

If the muzzle of the gun is too much to the *left* of the object, No 1 commands.

"*Trail to the right.*"

No. 5 steps up, places his handspike (bevel up) under the left cheek of the carriage; hands and feet as in sponging.

No. 4 wheeling inwards, places his handspike behind and under the point of the hind axletree arm, left knee bent; handle inclined towards the gun.

"*Heave.*"

No. 4 cross lifts and 5 heaves under the carriage, both taking fresh purchases until "halt," when they resume their places.

"*Trail left.*"

No. 4 acts as 5 did, and *vice versa*.

"*Elevate.*"

Nos. 2 and 3 place their handspikes under "the vent-field," and rest them on the "cheeks" of the carriage, hands (fingers under) at the small ends.

No. 1 adjusts the "quoin," giving the word "*Heave*" or "*Lower*," and when he has obtained the proper "elevation" or "depression,"

"*Down.*"

Nos. 2 and 3 resume their former positions.

No. 1 takes up his handspike, right hand at the shoulder, left 18 inches from the small end (fingers under), faces about and lays it down in rear of the platform; the other men take a side step towards the gun, face it, shift their handspikes, (points towards the parapet,) raise them up horizontally, (hands $\frac{1}{2}$ separate fingers under), lay them down (*Section II. para. 2*), and take post under cover of the merlon.

"*Prime.*"

See Duties of No. 4.

"*Fire.*"

See Duties of No. 5.

"Change round."

When it is considered necessary to change the position of the Men at the gun, this word of Command is given :—

No. 2 becomes No. 4.

No. 4 „ No. 6.

No. 6 „ No. 5.

No. 5 „ No. 3.

No. 3 „ No. 2.

No. 1 stands fast.

When this Command is repeated, the Men on the left move forward one number, those on the right move back, with the exception of No. 1, who commands; thus each man performs *all* the duties in turn.

After exercise,

"Lay the gun under metal."

2 and 3 elevate, and 1 pushes in the quoin.

"Down" (as before).

"Detachment file to the rear."

"Outwards face" (if at the gun, *"right about face"*),

"Quick march."

"Right wheel."

No. 6 having wheeled, marks time on his own ground, and Nos. 5 and 3 file in his rear and cover. Nos. 1, 4, and 2 wheel, and form the rear rank.

SECTION IV.—TABLE SHOWING HOW THE DIFFERENT DUTIES ARE TO BE PERFORMED WITH DECREASED NUMBERS.

Description of Ordnance.	Number of men employed.	Distribution of Duties for Different Guns.						Remarks.
		No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	
32 pndr.	6 Men.	C. R.	S. R. E.	L. R. E.	V. P. R. T.	R. T. P.	A.	All calculations for the duties are the same as for a 12 lb. Howitzer.
24 "	5 "	C. R.	S. R. E.	L. R. E.	V. P. R. T.	A. R. T. P.		
18 "	4 "	C. V. P. R. F.	S. R. E. T.	L. R. E. T.	A. R. F.			
12 & 9 "	3 "	C. V. P. R. F.	S. R. E. T.	A. L. R. E. T.				
* Cartridges.								
68 pndr.	5 "	C. R.	S. R. E. X.	L. R. E.	V. R. T. P.	A. R. T. P.		When loading Cannon-litters, the same duties are the same as for a 12 lb. Howitzer.
24 "	4 "	C. V. R. P.	S. R. T. E.	L. R. T. E.	A. E.			
12 "	3 "	C. V. R. P.	S. R. T. E.	A. L. R. T. E. F.				
Howitzers.								
10 inch.	6 "	C. V. T.	S. W. D. R. E.	L. H. E. E.	B. H. R. T. P.	B. R. T. E.	A. I.	* When loading Cannon-litters, the same duties are the same as for a 12 lb. Howitzer.
8 "	5 "	C. T.	S. W. D. R. E.	A. L. H. R. E.	V. R. T. P.	I. B. R. T. P.		
Ditto	4 "	C. V. R. P.	S. W. D. R. T. E.	A. L. H. R. E. T.	B. I. R. F.			
Mortars.								
13 inch.	6 "	C. V.	R. T. E. S. W. H.	R. T. E. L. H.	R. T. B. H. P.	R. T. B. H. P.	A. I.	* When loading Cannon-litters, the same duties are the same as for a 12 lb. Howitzer.
10 "	5 "	C. V. P.	R. T. E. S. W. H.	R. T. E. A. L. H.	R. T. B. F.	R. T. I. B.		
8 "	4 "	C. V. P. R.	R. T. E. S. W. H.	R. T. E. A. L. H. P.	R. I. B.			
5½ "	3 "	C. V. P. P.	R. T. E. S. W. H.	R. T. E. A. L. I. B.				

A. serves ammunition; B. brings shells; C. commands and points; D. pushes the shell home; E. elevates; F. fires; H. helps to put in shell; I. prepares shell, and fixes and cuts the fuze; L. loads; P. primes; R. runs the gun up; S. sponges; T. traverses; V. serves the vent; W. wipes the shell and uncaps the fuze; X. assists No. 3 to put in the shot.

SECTION V.—HOWITZERS.

The exercise is the same as for Guns; and the shells are brought up as for Mortars. (Sec. 4.)

TO PUT THE SHELL IN.—Nos. 3 and 4 lift it into the piece; No. 2 wipes it, uncaps the fuze, takes hold of the fuze with the pincers, and when Nos. 3 and 4 have fixed the fuze in the "axis of the bore" and disengaged the hooks, he pushes the shell home.

The men should be warned to stand clear of the muzzle at the word "*Fire.*"

SECTION VI.—CARRONADES.

The exercise the same as for Guns. (*see* Table of Duties.)

For 68 pounder No. 2 assists No. 3 to put in the Shot.

When Shells are used the duties as for 8-inch howitzer. (*See Table.*)

SECTION VII.—LOADING WITH "HOT SHOT."

For a 32-pounder, 7 men; 24-pounder, 6 men; 18-pounder, 5 men; besides 3 men, at least, at the grate (1 to tend the fire; 1 to pick out the reddest shot; 1 to scrape the shot and place it on the "bearer").

The exercise and stores, the same as before.

The charge should be contained in a strong flannel bag, to prevent accidents from powder falling on the bore.

When the charge has been rammed home, No. 3 puts in a *dry* wad and then a *damp* one, after this the gun is "primed" and "run up" to within about a foot from the embrasure to allow of the shot being put in.

POINTING AND LAYING.—If the gun requires "depressing," before loading elevate it so that the shot may roll home, and ram a wad after it to prevent it falling out; the gun may be "laid" with safety after the shot has been put in.

If the Gun is to be "elevated," lay it before putting in the shot.

BRINGING THE SHOT.—Nos. 4 and 5 bring the shot from the grate on the "bearer," march up close to the left of the chase, halt facing the parapet, No. 4 on the *left*; No. 5 on the *right* touching the gun; No. 5 changes the *handle* of the bearer to his *right* hand, and, assisted by No. 4, places it on the "chase;" No. 2 on the other side of the gun takes hold of the handle with his *left* hand, gives the word "*Prepare to load.*" when he and No. 5 extend their arms, bringing the

bearer with the shot to the mouth of the gun. No. 2 then gives the word "*Load*," when with a slight *cant* the shot rolls into the bore. No. 2 lets go the handle, and No. 5 lays the "bearer" on the ground to the left of the gun.

"*Fire*" as soon as the shot has rolled home.

SECTION VIII.—GUNS ON TRAVERSING PLATFORMS.

68-pounder, 7 men; 32-pounder, 6 men; 24-pounder, 6 men; 18-pounder, 5 men; stores as before (*Section II.*). 4 short levers for working the gun, and 2 wedges for the trucks of the platform, in addition, and 2 handspikes for elevating. Side arms are placed under the gun on the Traversing Platform, sponge-head and wad-hook towards the rear, rammer-head resting on the front transom (or crossbar).

1. RUN THE GUN BACK (*about 2 feet from the epaulment.*)—Nos. 2, 3, 4, and 5, take up levers, turn their points to the rear (bevels under), and take purchases under the circumference of the trucks of the carriage—"Heave," "Halt," "Down" (as already explained).

2. TO SPONGE.—At the word "*Load*" No. 2 steps with the left foot on to the circular piece of iron above the fore-truck of the platform, throws his *right* foot round the end of the platform, placing it on the step in *front* of the transom, and the *left* foot on the transom; he then stoops down, seizes the sponge (right hand above, left under), draws it out from under the gun-carriage until the middle of the stave is at his right hand, when he raises it parallel to the axis of the piece, and brings the sponge-head to the side of the muzzle with his *left* hand and sponges as usual; but on withdrawing the sponge he seizes it by the middle of the stave with his *right* hand, and, letting go the *left*, raises it horizontally above his head, brings the rammer-end round to the muzzle, steadying it there with his *left* hand.

3. RAMMING HOME.—No. 3 having put in the charge (*see Loading*), No. 2 rams it home, turns the sponge round again, as before, replaces it under the carriage, and dismounts *left* foot first.

4. LOADING.—At the word "*Load*" No. 3 mounts as No. 2 did, but *right* foot first, and stands with one foot on the step and the other on the transom, turns his body to the left, receives the ammunition, assists No. 2 to ram it home (as usual), and dismounts *right* foot first.

5. **SERVING THE VENT.**—At the word "*Load*" No. 4 mounts the platform, and, standing on the rear transom, serves the vent as usual.

6. **RUN THE GUN UP.**—The reverse of "running it back;" at the word "*Halt*;" if the gun has an elevating screw, all the levers are withdrawn and men face to the rear, resting the points of the levers on the ground; if not, Nos. 2 and 3 lay down their levers, and take up their handspikes, ready to "*Elevate*."

7. **POINTING and LAYING.**—No. 1 mounts the platform, and proceeds as with ordinary guns.

8. **TRAVERSING.**—"Trail right," No. 5 applies his lever under the hind-truck of the platform, bevel under, and resting on the circular curb, (both hands backs upwards, at the handle of the levers.) "*Heave*"—"Halt" "*Trail left*," the reverse, (4 does as 5 did.) Nos 4 and 5 always block the trucks with the wedges before withdrawing the lever.

9. **ELEVATE.**—Nos. 2 and 3 apply their handspikes under the breech and proceed as with other guns; "*Heave*," "*Lower*," "*Down*," (as usual).

10. **PRIME.**—No. 4 mounts as before, and proceeds as with other guns; when there is no lock to the gun he ties a piece of quick match over the cup of the tube, and hangs it over the left side of the gun.

11. **FIRE**, as with other guns.—With 8-inch guns No. 7, who is in the rear rank, passes the eye end of the "preventer rope" over the rear transom of the platform, and under the rear transom of the carriage, to No. 3, who hooks it to the fore-axletree. No. 7 then takes a turn round the ballard, "*Run the gun up*." Nos. 2 and 4, 3 and 5 hook on the truck levers, Nos 4 and 5 steadying the small ends, while No. 7 eases off the preventer rope, assisted by No. 1 if necessary.

SECTION IX.—MORTAR EXERCISE.

STORES REQUISITE FOR SERVICE OF MORTARS.

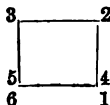
1 Sponge—	1 Scraper (for every 2).	AT MAGAZINE.
4 Handspikes—	2 Pointing rods.	
2 Shell hooks—or	1 Beam hook.	1 Budge barrel.
1 Plummets and line	1 Quadrant (for 4).	1 Set of weights and scales.
1 Perpendicular (for 4)	1 Fuse engine (for 4).	1 Set of powder measures.
1 Tube box—	1 Portfire stick—	
1 Mallet.—1 Loading funnel—1 Filling funnel—1 Cork screw—2 Setters		
—Tow and Flax—Shells—lb. shot, and Bottoms for ditto—Valenciennes' composition—Fuzes—Cartridges—Light balls.		

MORTARS are usually placed 15 feet apart.

No. 1. commands and orders the Charge and length of Fuze.

"Right face; take post at the mortar; quick march."

The men, being protected by the Epaulment, remain at the Mortar:



"Run the mortar up."

Same as with guns, except that handspikes are placed behind and under the running-up bolts.

"Heave," "Halt," "Down" (same as with guns).

"Cross lift the mortar to the right."

[If required to adjust the mortar bed, to make its axis coincide with the "line of fire."]

Nos. 3 and 5, with their backs turned towards the epaulment, take purchases under the traversing notches in front and rear of the cheeks. No. 2 places his handspike *under* and in *front*. No. 4 places his *under*, and in *rear* of their respective running-up bolts—*"Heave,"* and when the proper alignment is obtained—*"Halt"* (as with guns). Or

"Cross lift to the left" (the reverse of the above).

"Plant the pointing rods."

No. 1. stands on something in rear of the mortar, in order to look over the epaulment at the object he intends aiming at, and by means of a line and plummet he aligns the axis of the mortar with it: at the above order, No. 3 mounts the epaulment with the rods, places himself near the crest, his right towards the mortar; No. 1 "dresses" him; at the word *"Halt,"* No. 3 kneels on his right knee and holds out one of the rods perpendicularly; No. 1 orders *"To you,"* or *"From you,"* and when aligned with the object and the axis *"Plant it there;"* No. 3 plants the other rod in the same way, about 6 feet to his left, and covering the 1st rod, after which No. 1 orders *"Come down."*

"Elevate."

Nos. 2 and 3 elevate; No. 1 applies the thread of the plummet to the axis of the trunnion, on the face of which the degrees are marked. *"Heave," "Lower," "Down"* (as with guns).

To fire at any of the following elevations, the mortar must be placed at the corresponding distances from an epaulment 8 feet high.

For 10 degrees, 40 feet distant				} To fire over an epaulment 8 feet high.
... 15	...	30	...	
... 20	...	21	...	
... 30	...	15	...	

It is better to raise the bed by wedges if the elevation be less than 15°.

“Load.”

To SPONGE.—At the word “*Load*,” No 2 faces to his right, takes the sponge by the middle of the stave, left-hand fingers up, right-hand fingers down, raises it to a vertical position, faces “right about $\frac{3}{4}$,” marches up, halts in line with muzzle, left foot close to the outside of the bed, heel in line with front part of the bed, right foot a little apart from the left. He brings the sponge in line with the axis of the bore, slips right hand to the rammer-head, enters the sponge, sponges the bottom of the bore and wipes the whole surface of the bore with the sponge (which he grasps firmly, not allowing it to turn in his hands); as it approaches the muzzle he straightens the *left* knee and bends the *right*. When the sponge is out he lowers the rammer-head until the stave is parallel to the *face* of the piece, then bends the right knee, stoops, and with the sponge wipes all round the face of the mortar; this done he straightens his knee, “taps the sponge” (under the muzzle), and brings the stave to a vertical position between the mortar and his left leg, shifting the *right* hand up to the *left*, which holds the stave by the middle, and “turns the sponge.”

SETTING HOME THE CHARGE.—When No. 2 has done sponging, No. 3 seizes a cartridge by the choke with his left hand, faces “right about,” goes up to the mortar and puts it in, pressing it well home with his hands; or if there is a chamber No. 2 sets it home with the rammer head before he lays down the sponge.

If loading with loose powder No. 2 holds the Funnel, No. 3 pours the powder into the chamber; then No. 2 wipes the rammer-head, presses home the powder, and taps it twice against the inside of the bore; No. 3 then levels the powder with his hand.

BRINGING UP THE SHELL.—For a 13-inch mortar, at the word “*Load*” Nos. 4 and 5 go and fix the “beam-hooks” to a shell, each holding an end of the beam with both hands (No. 4 on the left, No. 5 on the right, as they face the mortar), and lifting the beam as high as the groin, march square up to the left of the muzzle, then “*Left shoulders forward*,” “*Halt*” facing the *front* of the mortar; No. 2 wipes the bottom

of the shell, and uncaps the fuze. Nos. 4 and 5 lower the shell on the platform, still holding the beam. Nos. 2 and 3 mount upon the bed facing each other, and holding on by the "dolphins," lean towards the muzzle and receive the shell.

For 10 Inch.—The same, except that "hand hooks" are used, and Nos. 2 and 3 do not mount on the bed. Smaller shells are carried in the hands, and lowered by hand into the mortar.

TO PUT IN THE SHELL.—For 13 inch Nos. 4 and 5 place the Beam in the bend of the arms of Nos. 2 and 3, who lift the shell into the bore. No. 4 makes the "lugs" of the shell correspond with the axis of the bore, while Nos. 2 and 3, pressing the beam-hooks from them, lower the shell into the mortar, and fix the fuze exactly in the axis of the bore. No. 2 hands the hooks to No. 4, who lays them down to the right of the sponge.

For 10 Inch.—Nos. 2 and 3 lift the shell into the bore. No. 2 directs it, and fires the fuze as above.

CARCASES AND LIGHT BALLS.—The same as shells. No. 2 uncovers the holes and loosens the priming.

POUND SHOT OR STONES are brought up in a box. No. 3 places a wooden bottom over the charge, and Nos. 2 and 3 empty them on it. No. 4 takes away the box.

SERVING THE VENT.—The same as with Guns.

POINTING and LAYING.—No. 1 posts himself behind the mortar, brings the "plummet" up to his right eye with his right hand, and steadying it with his left, places himself so as to make the "line" coincide with the *two* pointing rods on the parapet; he then orders the mortar to the right or left until the notch on the muzzle and that behind the vent (which agree with the axis of the piece) are exactly covered by the line, the mortar will then be in the true direction. N.B. The notches may be chalked to make them more distinct.

" Traverse."

At this word Nos. 2, 3, 4, 5 take up handspikes.

" Muzzle Right."

Nos. 2 and 5 place theirs to the *front* and *rear* bolts for "cross-lifting." Nos. 3 and 4 to the *front* and *rear* notches for heaving. "*Heave,*" "*Halt.*"

" Muzzle Left" (the reverse).

FOR A 10 INCH ("*Muzzle right*").—No. 2 under the *rear* notch and No. 3 under the *front* notch; both heave.

" Prime" (as with guns).

" Fire" (as with guns).

"Run the Mortar up."

FIRING BY NIGHT.—After the Mortar is laid, nail a thin plank touching one of the cheeks of the bed to the platform, and run the Mortar up to it each time, or chalk the platform and bed in different places, and use a lanthorn.

**SECTION X.—RANGE, CHARGE, AND FUZE, ETC.,
FOR MORTARS.**

Range in yards.	Fuze.	Charge.		
		13 inch.	10 inch.	8 inch.
	inches.	lbs. oz.	lbs. oz.	lbs. oz.
400	1·8	1 12	0 15	0 9½
500	2·1	2 1	1 2	0 10½
600	2·2	2 5	1 4½	0 13½
700	2·4	2 9	1 7½	0 15½
800	2·5	2 13½	1 10	1 0½
900	2·6	3 2	1 12	1 2
1000	2·7	3 7	1 14	1 3½
1100	2·8	3 11	2 1½	1 4½
1200	2·9	4 0	2 4	1 6
1300	3·0	4 5	2 6½	.....
1400	3·1	4 10	.....	.....
1500	3·2	4 15	3 0	.....
1600	3·3	5 4½	.....	.....
1700	3·4	5 10	3 4	.....
2000	3·7	...	.....	2 0
2400	4·1	...	4 3	.....
2900	4·6	9 0	.....	.....

TO FIND THE CHARGE FOR A GIVEN RANGE.

13-inch Mortar.—To the range, in yards, add half the range, and multiply the sum by ·03, for the charge, in ounces.

10-inch Mortar.—To the range, if under 1,350 yards, add 160, and multiply by ·02; if above 1,350, add ½ of the range, and multiply by ·02, for the charge, in ounces.

8-inch Mortar.—To the range, in yards, add 20, and multiply by ·015, for the charge, in ounces.

5½-inch Mortar.—To the range, in yards, add 150, and multiply by ·08, for the charge, in ounces.

The *Charge* for Mortars is regulated according to "the range required;" and the fuze is cut according to "the time

of flight;" that is, the time the shell takes to reach its object. (*See "Fuzes."*)

The elevation of Mortars is usually 45° .

In loading, the bottom of the shell is placed against the charge, and the fuze uppermost.

The thickness of a shell should be $\frac{1}{2}$ of its diameter, nearly *two-thirds* of the solid ball.

FUZES.

FUZE COMPOSITION.

	GR.
Saltpetre, pulverised.....	18
Sulphur, sublimated.....	4
Pit meal powder	7

BLIND FUZE FOR NIGHT.

Meal powder.....	16 $\frac{1}{2}$
Wood shaves	9 $\frac{1}{2}$

The Fuzes now used are $5\frac{1}{2}$ inches, in 2-inch lengths.

For Mortars longer lengths are issued.

To avoid accident, never unscrew the metal cap which covers the fuze until the shell has been introduced into the gun.

Fuze cases are made of wood, and are "driven" with composition. They must be cut according to the range required, and time of flight.

TO FIND THE LENGTH OF A FUZE for "common shells," take 300 from the range in yards, or for "shrapnel" take 350, and allow one tenth of an inch of fuze for each remaining 100 yards, for Guns.

FOR MORTARS, multiply the "time of flight" by .23.

A $5\frac{1}{2}$ -INCH FUZE burns at the rate of—for the first 0.2 of an inch, at .66 of a second per 0.1; up to 1.0 inch at .598 of a second per 0.1, and for each 0.1 of an inch exceeding one inch, at .060 less than .598, deducting .001 each time.—Mean rate .5976 per 0.1 inch.

TO FIND THE "TIME OF FLIGHT."—Divide the square root of the given range, in feet, by 4.5, the quotient will be the time in seconds.

TO FIND THE "TIME OF DESCENT."—Divide the given height by $16\frac{1}{2}$, and the square root of the quotient will be the time required $\frac{1}{2}$.

SECTION XI.—

DESCRIPTION OF ORDNANCE.	Weight.	Length.	Calibre.	Gauge. inches.	Angle of Dipart.	Charge.	Shot.	
							Solid.	Hollow.
10 in. Gun.....	85	9 4	10-0	9-85	2-25	12 0	...	83-0
8 " "	65	9 0	8-05	7-89	2-0	10 0	...	47-0
68 pounder.....	112	10 10	8-1	7-92	2-25	20 0	68	...
56 "	98	11 0	7-6	7-46	2-25	16 0	56	...
42 "	84	10 0	6-9	6-76	2-0	14 0	42	...
32 "	56	9 6	6-41	6-17	2-5	10 0	} 32	...
32 "	32	6 6	6-3	6-17	2-25	5 0		
24 "	50	9 6	5-8	5-61	1-5	8 0	24	...
18 "	42	9 0	} 5-29	{ 5-09	1-5	} 6 0	18	...
18 "	38	8 0		{ 5-09	1-5			
12 "	34	9 0	4-62	4-52	1-5	4 0	12	...
9 "	18½	6 0	4-20	4-09	1-5	3 0	9	...
6 "	17	6 0	3-66	3-56	1-5	1 0	6	...
Howitzers.								
10 inch	40	5 0	10-0	9-85	...	...	...	...
8 "	20	4 0	8-0	7-92	...	...	...	...
5½ " 24 pr....	15	3 6	5-7	5-57	...	...	...	...
4-4,, or 12 pr....	6½	3 9	4-58	4-52	...	...	...	...
Carronade.								
68 pounder.....	36	5 4	8-05	7-92	...	...	68	...
42 "	22	4 6	6-8	6-76	...	...	42	...
32 "	17	3 11½	6-25	6-17	...	...	32	...
24 "	13	3 7½	5-68	5-61	...	...	24	...
12 "	6	2 8	4-52	4-52	...	...	12	...
Mortars.								
13 inch	36	3 5	13-0	12-8	Fuze. inches. 4-6	9 0	Beds. cwt., 49	...
10 "	25	2 4	10-0	9-8	4-1	4 0	16½	...
8 "	9	1 10	8-0	7-8	3-7	2 0	7½	...
5½ "	1½	...	5-5	5-3	2-5	0 8½	1	...
4-4,,	5 10	...	4-4	4-2	2-3	0 5	½	...

DESCRIPTIVE T

Com. Shell.		Bursting powder.	Empty.	Remarks.
Empty.	Full.			
lbs.	lbs. oz.	lbs. oz.	lbs.	
82	87 8	5 8		
46	48 4	2 4	32	gun to be used with hollow shot, shells, and spherical also common case. Useful against shipping, to command roadsteads and approaches.
39	41 1	1 12		situations requiring very distant ranges.
28	29 9	1 4	19	power of this gun points it out as one of the best for distant ranges, against shipping, &c. Hot shot in addition to usual ammunition.
22	23 3	1 0	15	gun is for flanks, and all purposes of a shorter range than the above. Ammunition the same.
...	...	...	11	is somewhat less than a 32-pounder. Useful for general purposes.
...	...	...		range of this gun is considerable, and it is therefore useful against the approach of boats, &c. It is fitted for land fronts of works which may be exposed to desultory attack, and where rapid firing may be required, used also by an army as a gun of position.
...	...	...	5	for flanks and short ranges.
...	...	...	4	used the same as long 18-pounder, and is often very useful.
...	...	...	3	usually intended for saluting batteries.
82	87 8	5 8		powerful pieces may be used for faces, flanks, interior angles, and against enemy's cruisers. Their weight is such as to allow their being moved from place to place.
46	47 14	1 14	32	8-inch is used with an army as a gun of position.
16	16 14	0 10	15	convenient piece on works, and for slightly-built towers.
8	8 6	0 5	5	
46	48 4	2 4		
28	29 9	1 12		
22	23 3	1 0		
16	16 14	0 10		
8	8 6	0 5		
194	205 4	6 8		
86	90 13	2 10		star is sometimes used for throwing 1 lb. balls, or stones, which are emptied into it on a wooden bottom, placed next to the charge.
46	48 4	1 14		
16	16 14	0 10		
8	8 6	0 5		

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